

HL IB Psychology



Your notes

Ethical Considerations in Animal Research

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Ethical Guidelines for the Use of Animals in Research

What ethical considerations apply to the use of animals in research?

- Researchers are not able to apply the **ethical considerations** that they would use when working with **human participants** e.g. it is impossible to gain **informed consent** from animals; animals cannot be given the **right to withdraw**
- There are particular **ethical guidelines** which apply only to the use of animals as set down by bodies such as the **British Psychological Society (BPS)** and the **American Psychological Association (APA)**
- In the past animals may have been used without much consideration for their wellbeing but it is becoming increasingly important that researchers exercise due care and respect for their animal subjects to minimise suffering and only use animal subjects when it is deemed necessary
- Researchers must undertake a **cost/benefit analysis** when considering using animals in research: if the costs outweigh the benefits then the research should not take place
- Any study which uses animals should have a clear **aim** and should be able to stand up to **scrutiny** as a piece of scientific research
- Possible **alternatives** to the use of animals in research include using **cell cultures**, **computer simulations** or conducting a **meta-analysis** i.e. using work already completed by other researchers

What are the specific ethical guidelines used in animal research?

- There are three clear determining factors which researchers must apply when using animals in research:
Replace; Reduce; Refine
- Replace: use alternatives to live animals e.g. computer simulations or existing video footage of previous research
- Reduce: use as few animals as possible for the study and conduct a **pilot study** to ensure that any flaws in the procedure are addressed so that animals are not used thoughtlessly
- Refine: procedures must be analysed to ensure that animals do not suffer unnecessarily e.g. limit any **aversive** or harmful elements to the procedure such as keeping an animal in isolation or interfering with its usual routines such as feeding and sleeping; avoid overcrowding animals in **laboratory cages**
- Refine: study animals in the wild, living in their **natural environment** where possible; handle animals with care, particularly if the animal has undergone any **surgery** as part of the research process



Worked Example

EXTENDED RESPONSE QUESTION (ERQ)

22 MARKS

The question is, 'To what extent is research using animals ethical?' [22]

'To what extent' requires you to consider a range of arguments regarding whether or not animal research is ethical so that you are able to form a conclusion based on the points that have been raised in the essay. Look at these exemplar paragraphs to give you an idea as to how to construct relevant arguments for this exam question:

Researchers must conduct a cost-benefit analysis weighing up the decision to use animals at all, even within the ethical guidelines, to minimise the cost to the animals. The benefits and costs have to be considered for each piece of research. However, sometimes the benefits for treatment of humans are not known until human clinical trials take place after the animal studies i.e. it is ultimately more ethical to test the treatment on animals first. However, this approach can backfire and lead to humans being harmed: Archibald and Coleman (2012) stated that, in 92% of medical cases, treatments that worked with animals failed clinical trials with humans. Bearing this in mind perhaps it could be argued that animal research should be abandoned as it does not serve a useful purpose.

Animal research may be unethical to a great extent in that we often cannot argue that the benefits outweigh the costs until many animals have been used in research and probably suffered as part of the process. Researchers have to believe that it is better to use an animal to potentially understand human behaviour and to develop cures for human disorders than it is to use a human, even if that human is a volunteer. Minimising the animals' distress, using as few subjects as necessary, and housing them as humanely as possible makes the research ethical to a greater extent than it was before these measures were introduced. What cannot be ignored however, is the lack of generalisability to humans which means that such research is unethical as, really, what is the point of it? Where researchers have reasonable doubt as to the usefulness of using animals then alternatives, such as computer simulations or cell samples should be used. In this way the research would be fully adhering to the ethical guidelines for the use of animals in research.

Applying Ethical Considerations to Key Studies Which Use Animals

Applying the 'Replace' ethical guideline to key studies

- In **Weaver et al. (2004)** the rats could have been replaced by using the results of existing studies into **human attachment** e.g. Rutter's (1998) **longitudinal** research into the experience of **Romanian orphans** who suffered **deprivation** due to their time spent in the **aversive environment** of Romanian orphanages
- Similar to the above point, the results of **Lassi & Tucci (2017)** could have been achieved by looking for **epigenetic** changes in humans who have experienced fostering: both **biological** and **social** measures could be applied e.g. **DNA analysis** and **interviews** rather than using mice in **lab conditions**
- **Rosenzweig et al. (1972)** placed some rats in an **impoverished environment** which was seen to affect their **brain plasticity** but this would be unnecessary today with the use of **MRI** technology using human participants such as in **Luby et al. (2013)** which looked at the effects of poverty on the brain

Applying the 'Reduce' ethical guideline to key studies

- **Martin et al. (2005)** used 30 red-backed salamanders in their research on **pheromones** but it could be argued that they could have reduced this number, particularly as a **repeated measures design** was used thus maximising the results per salamander
- The number of rats used in **Weaver et al. (2004)** and in **Fadda et al. (1996)** is not mentioned in the original journal articles which begs the question as to how many were used and why the researchers did not include this in the **abstract** (does this imply that the **sample size** is unimportant as non-humans were used?)
- **Lassi & Tucci (2017)** used 8 litters of mouse pups with each litter containing 6–10 pups which in total comes to at least 48 mouse pups; this could potentially have been reduced so that fewer mice experienced the **artificial** environment of the lab and separation from their mother

Applying the 'Refine' ethical guideline to key studies

- Rosenzweig et al. (1972) destroyed the rats in their study in order to perform **post-mortem brain analysis** on each rat brain which today would be unnecessary due to the development of **brain-imaging technologies** such as MRI
- Testing **territoriality** in red-backed salamanders in the study by Martin et al. (2005) could possibly have been conducted in the wild as this would be a true test of the animal defending its territory from intruders: the researchers could have looked at a way of introducing the pheromones to the salamanders' natural environment
- Fadda et al. (1996) used a **specially implanted probe** to measure **acetylcholine** in the rats' brains but if they had used human participants in a **virtual T-maze** task they could have used a **non-invasive method** such as **fMRI** imaging to highlight the areas of the brain that were active during the task and **map** these areas to the production of acetylcholine