



The ethics of working with animals

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Animals (Scientific Procedures) Act, 1986

- Animals (Scientific Procedures) Act, 1986
 - Directive 2010/63/EU
- Ethical Principles
 - **R**eplacement
 - **R**efinement
 - **R**eduction
- Use of animal tissues
- Licences & training requirements



- Should we use animals/animal tissues
- Complimentary experimental techniques/preparations
- Harm / Benefit analysis
- Principles of the 3Rs – knowledge and application
- Animal welfare & husbandry
- Personal choices
- Understanding of ethical review procedures
- Training for users of animal tissues
- Knowledge of the arguments for and against



Harm / benefit analysis





Spinal Research

<http://www.spinal-research.org/injury.asp>

Paralysed animal

<http://www.youtube.com/watch?v=objviighrSg&feature=related>

Post stem cell therapy

http://www.youtube.com/watch?v=IKZ_QtwQ7Go&NR=1



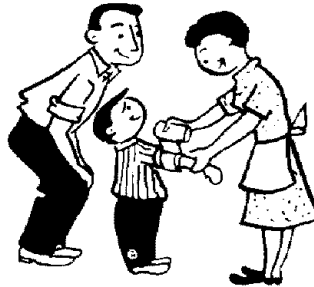
Harm vs. Benefit: Spinal cord injury



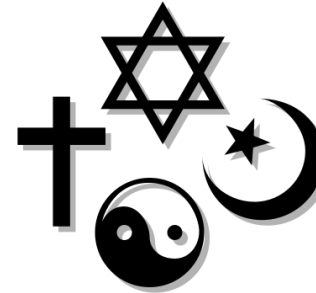
Patient



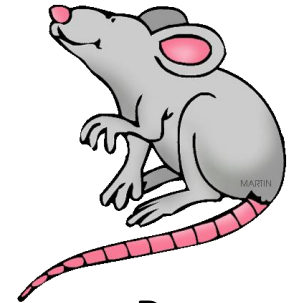
Scientist



Family



Very Religious
person



Rat

- Put yourselves in the shoes of your allocated individual
- Weight up the harms & benefits to you. What about for others?
- Are there any alternatives to the use of animals?
- What experiments must you undertake in animals
- How can you apply the 3Rs to your use of animals?



Knowledge and application of the 3Rs



- Mandatory Module 1 lecture
- Licence condition – application of 3Rs
 - Replacement
 - Refinement
 - Reduction

BUT IN PRACTICE ?

**How are you applying the 3Rs on a day to day basis
in your own research?**



Animal welfare & husbandry

Have you ever thought why your research animal is housed as it is?

Design a laboratory enclosure for your chosen species

Rat

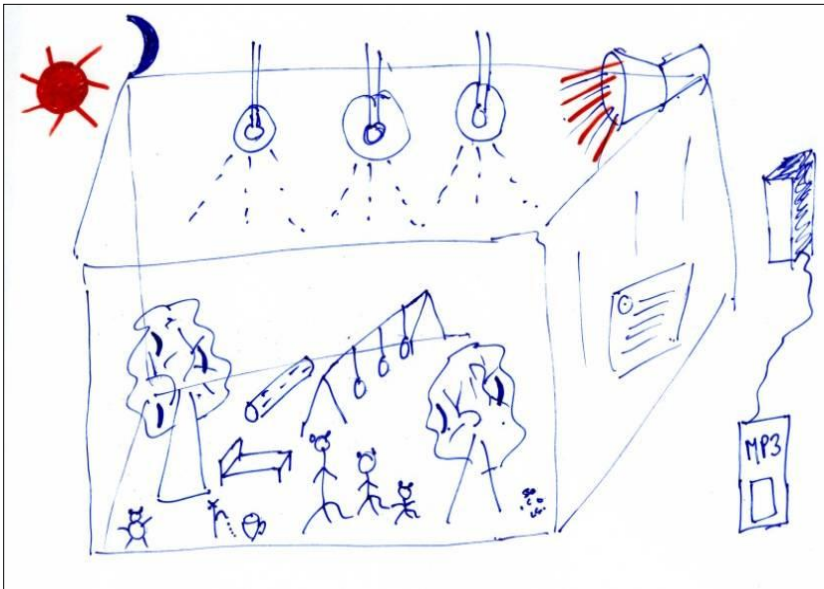
Photograph of rat in
sewer

Wolf/dog

Photograph of wolf in
forest

Photograph of monkeys
in jungle

Monkey



Photograph of rats in cage

http://www.understandinganimalresearch.org.uk/resources/images_library/details/230/rat_trio_a_round_red_rat_house/

Video clip of marmosets in cage

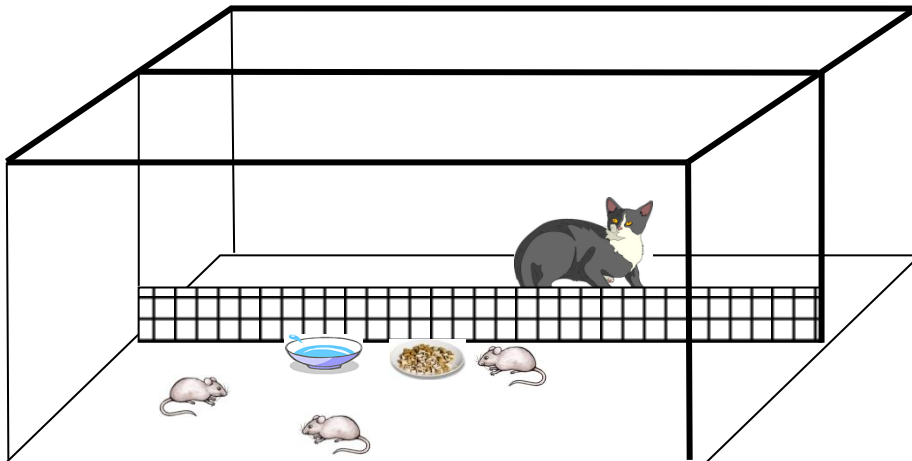
www.understandinganimalresearch.org.uk/resources/videos_library/details/267/marmosets_in_medical_research/



Understanding ethical review processes



- PPL holders
- Project licence application
- Something “different”



- Q & A that an ERP may consider

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FACULTY OF BIOLOGICAL SCIENCES

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STUDENT HANDOUT

“THE USE OF ANIMALS IN SCIENTIFIC RESEARCH; ETHICS & THE 3RS”

Part A: *The workings of an ethical review committee: Assessment of a project licence application*

A STUDY OF THE PREDATOR-PREY RESPONSE.

This study will show whether the response of prey animals to a predator is a learnt behaviour from parents, an innate inherited response, or a response that only develops on exposure of the individual to a predator.

It is proposed to use three groups of mice with different origins namely (i) wild caught mice, (ii) the first generation of mice bred from captive wild mice and (iii) laboratory bred mice obtained from suppliers licensed under the 1986Act. These three categories will contain mice with different experience of predators. Group (iii) mice are very inbred animals, which for many generations have had no exposure to predators. They are unlikely to respond in predator-prey interactions in the same manner as mice in the wild. They will serve as controls for the wild caught mice. The first generation offspring of the wild caught mice will themselves have had no exposure to predators whereas those wild caught will have developed, by experience, avoidance responses to predators.

Mice are the animal of choice because they are cheap and a larger number can be used compared to larger species such as the rat and rabbit. The preferred predatory animal would be the farm cat. The predator animal must be aggressively predatory but also able to be handled by the licensee. The farm cat is ideal being semi-feral and able to survive on its hunting ability. The normal well fed house cat is unlikely to be sufficiently interested in the prey if it recognises it as prey at all.

Protocol: three types of study will be carried out:

A floor pen with sides 2 by 3 metres long made of galvanised metal will be used. It will be divided along the centre of the longest sides by a 10cm high, 1cm square wire mesh on top of which is a transparent sheet of plastic enabling clear vision between the two areas but no physical access. Mice will be confined to the left pen and the predator to the right. Food and water will be provided in trays placed next to the dividing mesh to ensure that mice have to have approach the area of predator. Sawdust bedding but no other cover will be provided.

1. **Normal control behaviour of mice in absence of predator odour.** First the normal behaviour of each group of mice when in the left pen with no predator will be determined as a control. Each group will contain 25 mice and each group will be held in the pen for 48 hours. Behaviour, in particular time spent by the partition, will be observed using an infra red camera and video recorder. Faeces samples will be collected for cortical assays to measure stress levels.
2. **Behaviour in presence of predator odour.** All mice will be removed and the predator placed in the right pen for 24 hours. Urine and faeces produced will be left in the pen when the predator is removed. Each group of mice in turn will then be held in the left pen for 48 hours and behaviour monitored as in 1. Faeces samples collected as above.
3. **Behaviour in presence of predator.** The predator will be kept in the right pen and each group of mice in turn again held for 48 hours in the left hand pen. Behaviour will be measured as in 1. The predator will be fed in the pen and offered surplus mice killed by a Schedule 1 method. It is a necessary part of the learning experience of each group of mice that they see the predator consuming mouse carcasses. Faeces samples collected as above.

Read the above case study & then discuss within your groups the questions on the next page.

Inter-Disciplinary
Ethics Applied
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IDEA CETL www.idea.leeds.ac.uk



Training for users of animal tissues



- Schedule 1 training
- Workshop
 - Consider their own viewpoints
 - Alternatives
 - Ethical principals & 3Rs
 - Law & compliance
- Format
 - Student presentations
 - Discussion:

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SEMINAR 1: STUDENT HANDOUT

CAN THE USE OF ANIMALS IN SCIENTIFIC RESEARCH BE JUSTIFIED?

The use of animals and/or animal tissue in scientific or medical research raises strong emotions, with individuals either fundamentally opposed to or strongly supportive of such experimentation. Can it be justified either ethically or on scientific grounds? The aims of this seminar are to:

1. explore the case both for and against the use of animals in scientific and medical research
2. increase awareness of the ethical issues and legislative requirements surrounding such studies

Seminar organisation and assignments:

The session will be based around a series of short presentations followed by a group discussion of issues raised. Students will be divided into groups, with each group being required to prepare **one presentation** lasting a maximum of **7 minutes** (as a PowerPoint presentation or with overheads) to promote the case for **one** particular **point of view** or interest group. Any group going over this time limit will be stopped mid-presentation. These topics will be assigned to the sub-group randomly by the tutor to ensure that all topics are covered. The presentation should not just be a list of facts but should be a reasoned, logical argument which seeks to persuade the audience to a particular point of view (your allocated topic). Your presentation should not comprise of a list of groups that support your cause or a list of their aims or objectives. Instead, it should comprise of an introduction, the main body of the talk which provides evidence to support your cause and a conclusion. You can use emotional arguments but these should be supported by scientific facts. Even if you don't agree with your allocated viewpoint, for the purposes of this presentation you should adopt the position of a committed believer of your cause. Following these presentations, there will be a roundtable discussion of the issues raised.

Before the seminar, all groups should also prepare a **one page summary**, in bullet point format, of the key facts underlying their argument. This should be **emailed to (tutor name)** a minimum of **48 hours before the seminar**. Assessment for this tutorial will be based on your summary, the presentation itself and your individual contributions to the subsequent round table discussion.

Organisations campaigning for laboratory animals

- British Antivivisection Organisation <http://www.bava.pwp.blueyonder.co.uk>
- British Union for the Abolition of Vivisection <http://www.buav.org>
- Animal liberation front <http://www.animalliberation.net>
- Stop Huntingdon Animal Cruelty <http://www.shac.net>
- Uncaged <http://www.uncaged.co.uk/lams.htm>
- People for the Ethical Treatment of Animals <http://www.peta.org.uk/>

Organisations working on animal welfare and the 3Rs (refinement, reduction and replacement of animal use in research)

- Fund for the replacement of animals in medical e+periments <http://www.frame.org.uk>
- RSPCA <http://www.rspca.org.uk>
- National Centre for the 3Rs <http://www.nc3rs.org.uk/>
- Universities Federation for Animal Welfare <http://www.ufaw.org.uk/>

Scientific bodies e+plaining the need for animals in medical research

- Research Defence Society <http://www.rds-online.org.uk>
- Association of Medical Research Charities <http://www.amrc.org.uk>

Patient groups supporting the need for animal studies

- Pro-Test <http://www.pro-test.org.uk/>
- Coalition for medical progress <http://www.medicalprogress.org/>

Additional links can be found on the Research Defence Society website: <http://www.rds-online.org.uk> and the Home Office website: <http://scienceandresearch.homeoffice.gov.uk/animal-research/reference>.

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Personal choices

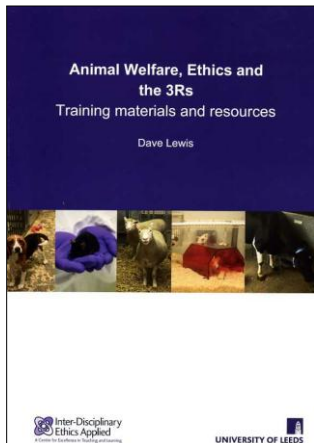
Images of different species of research animal
http://www.understandinganimalresearch.org.uk/resources/images_library

Images of different species of research animal
http://www.understandinganimalresearch.org.uk/resources/images_library

As a research scientist, which would you be willing to use in your research?

- 1 = only complimentary in-vitro techniques
- 2 = only rats or mice
- 3 = rats, mice and dogs
- 4 = rats, mice and monkeys
- 5 = rats, mice, dogs and monkeys

Any Questions?



Available from 3Rs@leeds.ac.uk or
<http://www.fbs.leeds.ac.uk/staff/profile.php?tag=Lewis>

Update coming out this year

Assistance with training courses: d.i.lewis@leeds.ac.uk