

The response reproduced below was submitted to the consultation held by the Nuffield Council on Bioethics on the ethics of research involving animals during October-December 2003. The views expressed are solely those of the respondent(s) and not those of the Council.

Professor Vera Baumans- Utrecht University, the Netherlands

Q1 What is your view about the use of animals in research?

A1 When it is not possible to obtain the information from alternatives without animals, then it might be justified to use animals when the relevance of the question is high enough. Not all results can be transferred to humans. History has learned that animal experiments are not a guarantee that drugs or treatments work in the same way in humans. When Fleming would have tested penicillin in guinea pigs, which are allergic to penicillin and drop dead from the needle, we might not have had penicillin at all for humans.

The acceptability depends on the purpose and the amount of suffering for the animals. About 55% of experiments cause minor discomfort, 18% severe.

Experiments with very severe discomfort must have a very high relevance.

Q2 What are your views about the use of genetically modified animals in research?

A2 Yes, it gives rise to ethical questions and it is difficult to predict the harm, which the genetic modification will cause as adjacent genes might also be affected. Types of animals, which should never be created are those created only for curiosity and also maybe for farming. There may be better ways to produce e.g. antibodies, such as production through yeasts. Long-term suffering can only be accepted as an exception when the relevance is very high. Controversial is to create animals for economic purposes (more (lean) meat in a pig, more eggs, etc.) or for curiosity in basic research.

I missed gene therapy.

Q3 What is your view about the use of alternatives?

a. Setting of Priorities

1. Do you think that there is there a need for more research into alternatives to research involving animals?
2. Who should fund research into alternatives?
3. In which areas could alternative methods be used more effectively?

b. Sharing of information:

1. How much duplication of animal research is there and would sharing of information reduce it? Which means of sharing information would be most appropriate?
2. Do you have concerns about the way research involving animals is reported in scientific journals?

c. For people working in the field:

1. What is the potential of approaches such as *in silico*, *in vitro*, microdosing or neuroimaging?

- A3 a1. Yes, especially in Refinement as this is a 'Cinderella' under the 3 Rs
 a2. Government, research institutes such as Universities, Pharmaceutical companies, Animal Protection Organizations.
 a3. In development/testing drugs
 b1. Much. Yes. Within Universities there might be sharing of information, although there is also overlap. In Industry, sharing information is not common for economical and confidentiality reasons.
 b2. Sharing information could go through conferences, publications, platforms, etc. In the Materials and Method section of a paper, information on animals, husbandry and procedures is so minimal that they generally can never be reproduced.
 c1. The potential of the named approaches can be large.
- Q4** What is your view about ethical issues relating to the use of animals in research?
- a. The moral status of animals:
 1. What moral status do you believe animals have?
 2. Do you think there are distinctions between the moral status of different animals, such as mosquitoes, mice and monkeys?
 3. What differences between humans and animals could justify the suffering of animals in research that would benefit humans?
- b. How can we know how much animals suffer?
 1. Can we reliably extend concepts such as 'pain', 'suffering', 'distress' and 'happiness' from humans to animals?
 2. Do you think that all animals feel physical or psychological pain?
 3. How can we assess the suffering of an animal during research?
 4. Can recordings of activity in the brain of an animal tell us whether it is in pain or whether it suffers?
 5. Can we know if an animal is self-aware or self-conscious?
 6. Should more research be undertaken to investigate how animals experience the world? If this research had to be invasive, do you still think it is important?
- c. Can we justify making animals suffer?
 1. What factors do you think should be the most important when considering whether research involving an animal is justified or not?
 2. How does the use of animals for medical research compare with the use of animals as pets, for food, clothing or in sport?
 3. What importance does the environment in which animals are kept have in assessing their well-being?
- A4. a1. I believe we have the right to use animals but the moral obligation to treat them well (good stockmanship/stewardship).
 a2. Yes, at least between mosquitoes and vertebrate animals.

- a3. See a1.
- b1. Yes, we can try to assess pain and suffering. Otherwise the analogy principle will help.
- b2. Yes.
- b3. By scoring methods
- b4. Not as a single method, always together with other physiological or behavioural parameters.
- b5. Difficult
- b6. Why would we do that? It is clear that they can suffer.
- c1. The relevance for man or animal and the amount of suffering
- c2. The use of animals in medical research is better regulated. There are hardly rules for having pet animals
- c3. A lot, but still not sufficiently recognized. Environmental factors as housing, climate, husbandry and handling have a great impact on the laboratory animal throughout its entire life, not only during experiments.

Q5 What is your view about the UK regulations on research involving animals in the UK?

A5. I cannot judge UK regulations as I am not from the UK.

Q6 What do you think about the information that is available to the public about research involving animals?

- a. What sort of information do you feel you need in order to make judgements about the acceptability of research involving animals?
- b. What would be suitable methods for informing members of the public about research involving animals and ethical issues surrounding it?
- c. Which types of people or institutions would you trust, or not trust, to provide you with balanced information about research involving animals?
- d. Do you think medicines that were developed using research with animals should be labelled to inform people of this fact? If so, what level of information should be given?

A6. a. It should be made clear to the public why and in which field animals are needed, where we can use alternatives. It should be done in a way people understand. Each researcher should be able to explain to the garbage man or cleaning lady why his or her research is important and what it is aiming at.

b. Media, hearings, leaflets with medicines.

c. It should be a combination of people: researchers (who are the experts), named veterinarian, animal welfare officer and government.

- d. Yes, packaging should be labelled to say that laboratory animals were used to develop this medicine. It should also say which species.