
Naturewatch

Eye on Animal Welfare

Brain-damaging primates for research

➤➤➤ **Over 200 MPs have now signed EDM 234** ⏪⏩⏪

Naturewatch is delighted with the strongly positive response given by many MPs to EDM 234, which calls for an end to experiments which cause brain-damage to monkeys. However, we also recognise that other MPs do have reservations: indeed, we are glad that this campaign is sparking some debate. In this briefing, we address a number of the concerns that have been raised.

The scope of a ban

The focus of our campaign is on those procedures which are self-evidently cruel, such as those observed by Lord Lucas and referred to in our previous briefing, and those recorded in the BUAV undercover investigation entitled "Cutting Edge". We do not contest brain research procedures which cause mild discomfort at worst (and thus cannot be said to cause brain damage), or those from which full recovery would be the normally expected outcome (as opposed to being the hoped-for result of an experimental procedure). We do not consider it necessary or practical to attempt to list experiments which would be banned: that is ultimately a task for the Home Office and/or the Animal Procedures Committee, based on the principle enshrined in the ban. Although we recognise that if the motion led to a change in the legislation, then some of the terms may have to be defined more precisely, the wording should be sufficient for present purposes.

Ethical considerations

Our call for a ban on these procedures is essentially ethical in nature. We believe that the costs to the monkeys involved are so high that they outweigh any benefits which may be said to accrue to humans in such research. Such an absolute ban has already been enacted in the more wide-ranging abolition of medical experiments on Great Apes, of whatever severity.

Legislators need to be aware that the much vaunted cost-benefit analysis is essentially an arbitrary process – how can costs to animals be meaningfully weighed against benefits to humans? – so for it to work effectively it is vital that the boundaries of permissibility be clearly defined. Thus, we believe brain-damaging primates should join experiments on Great Apes in being abolished in all circumstances because the costs to the animals involved are too high.

Research that would be unaffected

It is a fallacy to assume that banning experiments which damage the brains of primates would lead to a substantial diminution of research into neurological diseases. In reality, relatively few would be directly affected. The following is a limited sample of areas which would remain:

- **Genetic origins:** determining genetic susceptibility comes from studies of families with a particular disease. Several genes which have been identified as causes of hereditary Parkinson's; the research is ongoing (e.g. a recent find reported April 2004)¹
- **Environmental factors.** These are ascertained by studying the differing manifestations of a disease in different cultures. For example, dementias like Alzheimer's Disease appear to have a significantly lower incidence in the developing world than in the west². For example, African-Americans in Indianapolis have four times the occurrence of the disease than those in Ibadan, Nigeria³: this has pointed to the importance of diet and stress (both cholesterol and hypertension were much higher in the Indianapolis group), social interaction (much higher in Ibadan), and the comparative unimportance of intellectual development.
- **Non-invasive scanning techniques** would continue to be of critical importance. For example, MRI (magnetic resonance imaging) allows the brain anatomy to be imaged. Even more importantly, PET (positron emission tomography) is a powerful tool for monitoring the activity of important biochemicals by the use of radioactive tracers: thus, serotonin (linked to depression) and dopamine (linked to Parkinson's) can be monitored *in situ* within the human brain⁴ with minimal ethical difficulty.
- **Human tissue:** this is already becoming increasingly important for understanding diseased

¹ Valente EM et al., Scienceexpress, 2004 April 15.

² See for example Kalaria, R.N., The Lancet, vol 361, p888 (March 15 2003) and Prince M., et al., same issue, p909.

³ An accessible review article is provided by Hendrie, H.C., et al., Canadian Journal of Psychiatry 2004, 92–99, and on-line at <http://www.cpa-apc.org>

⁴ The website of the Society for Nuclear Imaging in Drug Development provides an informative resource: <http://www.snidd.org>

brain material compared to that which is healthy.⁵ For example, it has led to an understanding of which genes are over-expressed in diseased brains compared to healthy ones, and was critical in the development of the Parkinson's drug levodopa.

- **GM mice:** mice have been genetically modified to be susceptible to both Parkinson's and Alzheimer's diseases.⁶ While the breeding and use of such mice is not beyond ethical questioning – and neither can the issues of species differences be ignored – they would obviously not be affected by a ban on damaging the brains of primates.
- **Clinical trials:** The use of human tissue and GM mice should provide adequate screening of drugs before use on humans in a clinical trial. The data thus obtained are of far greater relevance to curing people of these terrible diseases than that found from damaging the brains of monkeys.

Thus, supporting this ban should not lead to the denial of life-improving or pain-relieving treatment for sufferers of, say, Alzheimer's or Parkinson's.

Species differences

The Government argues that species differences are taken into account in transferring data obtained with animals to humans. This is, however, a notoriously arbitrary procedure. While monkeys may be closer to humans in evolutionary terms than rodents, the difference in brain development is still vast. For example, the encephalisation quotient (a measure of brain size beyond that expected from physical size alone) for a marmoset is 3.4 times that for a mouse, but for a human is 4.3 times larger still. We do not argue that the existence of species differences like this renders the research entirely invalid; instead, we note that the extent of the validity is a matter of considerable uncertainty, and for which there has been scant attempt to quantify. The obstacle of species differences would be removed if a ban on brain-damaging primates led to more shrewd use of data from human sufferers (within necessary ethical constraints).

The Animal Procedures Committee

We wish to draw attention to one of the stated aims of the primates sub-committee of the APC, the body set up, under the terms of the governing legislation, to advise the government on contentious issues. This aim is "how to minimise, and eventually eliminate, primate use and suffering"⁷ In their recent report on current usage of primates, they add:

The statement about eliminating the use of nonhuman primates... in experimental procedures has attracted concern among some users. However, we consider this to

be a justifiable goal because it requires those who use primates to justify their need to use them, rather than to assume that such use is acceptable, and it should act as a stimulus to seek alternatives. We consider this to be especially appropriate in the case of primates because with their markedly more advanced cognitive faculties compared to other animals, and the difficulty in satisfying their behavioural and social needs in a laboratory situation, experimental situations are likely to be more stressful for them.⁸

This elaboration emphasises that their original stated aim is, despite objections, a firmly held belief. Nevertheless there is very little to show for it: this ban would be a small step towards realising that aim.

Taking a stand

In years to come we may well look back on damaging the brains of primates for medical research as being not only cruel but embarrassingly crude. We urge you to take an ethical stance and join the two hundred MPs who have already signed EDM 234, in calling for an end to this barbaric practice. The motion states:

This house believes that any scientific procedure which causes brain damage to monkeys or any other primate is ethically abhorrent, and calls on the Government to ban such procedures forthwith.

⁵ See for example <http://www.parkinsonstissuebank.ic.ac.uk>

⁶ See for example <http://jaxmice.jax.org>

⁷ APC report on "The use of primates under the Animals (Scientific Procedures) Act (1986)". <http://www.apc.gov.uk/>

⁸ Ibid, p7.