Speciesism in the Laboratory[*]

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The mid-1980s sees the entrenchment of animal experimentation as a political subject. No longer is it a fringe issue, a reform campaign espoused only by eccentrics; it is now a movement which has considerable public support in nearly all Western countries. Like most successful movements, it has a following at all levels in society and embraces a wide range of differing personalities and styles, conservative and radical, old and young, militant and constitutional.

Several factors in the 1970s gave growing weight to the historic anti-vivisection and animal rights movements. Six of these have been identified by Professor Harlan B. Miller, in *Ethics and Animals,* as:

- The momentum of liberation. Once colonialism, racism and sexism have been intellectually (if not practically) vanquished, then the next logical stage in the expansion of the boundaries of the moral in-group is an attack upon speciesism.
- Increasing scientific evidence that non-humans share intellectual and perceptual faculties in common with mankind. Miller emphasizes recent evidence of high intelligence in apes. (But, in addition, the new evidence that all vertebrate classes share with man the biochemical substances associated with the transmission of pain is of equal, or even greater, significance.)
- The ethical debate over abortion. Miller claims that this has moved the 'concept of a person' to the centre of the stage.
- The decline in dualistic views separating mind from body. The greater acceptance that the substance of central nervous systems (as they exist in many animals) is 'somehow identical with' mental life and consciousness.
- The development of behavioural sciences (such as sociobiology and ethology) which attempt to draw conclusions about human behaviour from observations of other animals. This has spread the view that homo sapiens is one species among other species.
- The rise of the environment and ecology movements, which have indicated an increasing 'awareness of nature' and of humanity's interdependence with other species'.

Miller adds a seventh factor in parenthesis. The popularity of science fiction and recent advances in astronomy have widened the view that the universe may contain other alien intelligences.

At a more mundane level, the interest of the media has had a considerable 'positive-feedback' effect, which has magnified the protest movement. Portraying the suffering of laboratory animals on the television screen has shocked the conscience of thousands and has vindicated the vivisectors' opposition to allowing the public to see what they are doing in the public name. Two further factors have given a new edge to the recent reform campaign. The first has been the emphasis placed upon the search for 'alternative techniques' which are humane. This search has been led by animal welfare groups in America, Britain and Germany. They have not only propagated the idea that humane techniques should be sought but have, in some cases, supplied the funds necessary for research into these new fields. Widespread cynicism among scientists has gradually been dispelled as tissue and organ culture and other techniques have been developed and their relative validities established.

The second factor has been the realization that many experiments on animals are not being

[*] In PETER SINGER (ed), *In Defense of Animals*, New York: Basil Blackwell, 1985, pp. 77-88.

performed for strictly medical purposes. To many people it seems logical to argue that deliberately inflicted pain may be justified if the results considerably benefit others. Such pain/benefit analysis usually comes down on the side of the animal when the only benefits from particular experiments are found to be a new cosmetic, soap powder or other inessential product, or greater knowledge of the effects of weapons. Psychological and other behavioural research can also fall into this category. Alan Smith has effectively questioned some of the excessive claims made by those who defend animal experimentation in an article entitled 'The Facts Vivisectionists Get Wrong' and published in the *New Democrat* in 1983.

There are two fundamental, and many subsidiary, objections to research on animals. The first fundamental objection is that it is wrong to kill; the second is that it is wrong to cause pain or suffering. Many people make both objections, but some will give higher value to one or the other. Some objections which are now subsidiary have, in the past, been of greater significance to the movement - for example, the argument that vivisection undermines the character of the vivisector or that its scientific purpose makes it contrary to religion. In our own time the argument has taken on a less religious and a more utilitarian complexion. Likewise it has become less man-centred and more animal-centred. There is less talk of moral *duties* and more of moral *rights.* It is the victim rather than the vivisector who is the object of concern.
Social reformers in Victorian England were often in positions of some influence and came from a relatively small ruling class. Consequently they felt that reforms could be imposed from above and were within their power; accordingly they appealed to the wrongdoer's sense of *duty.* In our own time, however, we see reforms motivated from below by mass movements of the young and the less powerful in society; in such cases the reformers' own sense of relative impotence leads them easily to identify with the oppressed victims and so to champion their *rights.*

The Size of the Problem

It has been estimated that between 100 million and 200 million animals die in laboratories around the world each year.

The best statistics have been kept by the Home Office in Britain, where the 1983 figures reveal that 4,221,801 experiments on living animals were licensed in the previous year. Of these, most involved the testing or development of veterinary, medical or dental drugs and other products, but 32,979 were for the testing of pesticides, 15,122 for the testing of herbicides, 66,185 for the testing of substances used in industry, 13,934 for testing household substances, 18,864 for the testing of cosmetics and toiletries, 20,125 for the testing of food additives and 3,214 for testing tobacco and its substitutes. The experiments were performed mainly on rodents (2,442,702 mice, 932,335 rats, 154,740 guinea pigs, 164,993 rabbits) but included 5,654 on primates (monkeys or apes), 13,146 on dogs, 251,818 on birds and 165,833onfish.

Experiments involving the deliberate induction of psychological stress numbered 43,529; 1,652 involved burning or scalding; 144,322 involved exposure to ionizing irradiation; 14,949 involved the use of aversive stimuli such as electric shock; 19,124 involved the application of substances to the eye; and 86,179 involved interference with the brain or other parts of the central nervous system (other than those areas controlling special senses).

Licences to perform experiments under British law (the Cruelty to Animals Act 1876) were held by 20,800 people, and of these 11,797 reported experiments during the year. Of these active licensees, 2,480 worked in commercial laboratories, 6,545 in universities and medical schools, 471 in National Health Service hospitals, 135 in public health laboratories, 297 in polytechnics, 991 in quasi-autonomous non-governmental organizations, 297 in government departments and 581 in non-profit-making organizations.

Although most experimenters were based at universities and medical schools (55 per cent), these performed only a minority of experiments (19 per cent). The bulk of experiments (52 per cent) were carried out at commercial laboratories.

Overall trends show a peak in animal experiments in Britain (5,607,400) in 1971. The decline in numbers to the latest figure in 1982 (4,221,801) is probably a function of the general economic recession rather than the result of the introduction of non-animal techniques.

Under British law a scientist requires a licence from the Home Office in order to experiment on living vertebrates. The licence provides protection against prosecution for cruelty under the principal animal welfare statute (the Protection of Animals Act 1911). Experiments must be performed on premises registered by the Secretary of State, which are subject to inspection by Home Office Inspectors. Currently there are fifteen inspectors covering 518 registered laboratories (or groups of laboratories), where 4,221,801 experiments were performed in 1982. These inspectors pay about 6,000 visits each year to such laboratories, some without notice. The Secretary of State is advised in his duties under the law by officials at the Home Office and by an advisory committee chiefly composed of scientists.

The Elements of Reform

If control is to precede abolition, the licensing of experimenters and the inspection of laboratories are first steps. The reduction of secrecy and the admission of public opinion into the control process must follow. In Sweden experiments are allowed or disallowed by local committees on which lay, animal welfare, animal care (veterinary) and scientific interests are represented. The requirement to use alternative (non-animal) techniques (or lower organisms) wherever possible is the next stage. The control of pain or its prohibition are also key reforms; in Britain experiments may involve 'severe' pain or enduring pain, but not pain which is both severe *and* enduring.

Whether or not an experiment is essential depends upon one's point of view. To the experimenter convinced of the importance of his own research, or to the business man determined to make a profit, almost any procedure may seem justified. Clearly, such decisions ought to be taken more dispassionately, ideally by a panel equally representative of the interests of the animals and the experimenters and arbitrated by a jury of intelligent lay persons. But in certain fields, such as cosmetics testing, behavioural research, agricultural research and weapons testing, the justification for inflicting pain wears thin in the opinion of most people. Here are just a few recent examples of experiments on animals:

- In London British scientists irradiated mice over periods of up to sixty days to cause lung damage. Mice sometimes took six months to die. Death from oesophageal damage can be extremely painful, yet the published report gives no indication that measures were taken to relieve suffering after irradiation.[1]
- In Newcastle castrated mini-pigs were subjected to up to eighty-one periods of compression and decompression. All the pigs suffered attacks of decompression sickness, from which several pigs died.[2]
- In London rabbits were injected in their knee joints to cause chronic inflammation for periods up to seven months, in experiments designed to research rheumatoid arthritis. The reports do not indicate that any pain-killing or anti-inflammatory agents were used to alleviate the animals' suffering.[3]
- In England monkeys were dosed with the weed-killer Paraquat. They became very ill, showing vomiting, anorexia, dyspnoea, hypothermia and acute renal failure. Some took

[1] *Br. J. Radial.* 1976, 49 and *Eur. J. Cancer* 1979, 15.
[2] *Br. J. Exp. Path.* 1980,61,39.
[3] *Br. J. Exp. Path.* 1981,62.

more than a week to die. It is known that paraquat poisoning causes humans to die in extreme agony over a period of days, and it is reasonable to assume that paraquat-poisoned monkeys suffer in a similar way.[4]

- In Hertfordshire electric shocks were repeatedly administered to the tooth pulp of beagle dogs which were injected with various substances, including in some cases analgesics.[5]
- At the Ministry of Defence research facility at Porton Down monkeys and other animals were repeatedly injected with glutaminase, causing vomiting, palor, spasms, lethargy, diarrhoea, dehydration and death. One monkey survived for twenty-eight days with persistent diarrhoea before being killed.[6]

Pain has become the central issue of the reform movement. In October 1983 the Royal Society for the Prevention of Cruelty to Animals (RSPCA) sent the British Secretary of State for Home Affairs its report, 'Pain and Suffering in Experimental Animals in the United Kingdom', with a foreword by Professor Pat Wall, one of the leading authorities in this subject. The report gave details of thirty-five recent British experiments as proof that the infliction of pain is not an unusual occurrence and concluded that pain is the single most significant issue of the political debate in this field and the main focus of public concern. The difficulty in defining pain was accepted, but the RSPCA pointed out that pain has been a legal concept in British law for more than a century, and difficulties in definition constitute no grounds for resisting reform.

In 1979 the RSPCA's report on shooting and angling, chaired by Lord Medway, had found that certain body chemicals associated with the experience of pain in man were also present in fish and other vertebrate classes. The 1983 report therefore concluded that this new evidence, added to the older neurological and behavioural findings, strongly indicated that all vertebrates share a common capacity to experience pain.

The report went on to recommend that all those experimenting on animals should be required to show competence in modern techniques of anaesthesia, analgesia, tranquillization, euthanasia and animal care, and to use these skills as a matter of course. The physiological effects of analgesia might interfere with some experiments, but so also might the physiological effects of pain itself. Too much was left to the discretion of the experimenter, and there should be constant recourse to independent on-the-spot authority from an expert 'animals' friend' within the laboratory. The absence of certain behavioural or other signs should never be taken as proof of the absence of pain, and as a general rule experimenters should record (and publish) descriptions of all steps taken to assess and maintain an animal's state of well-being.
1 he RSPCA report concludes by emphasizing the need for public accountability and recommends that experiments should be controlled by central and local ethical committees. These should have a composition balanced by equal representation between those representing the interests of the experimenters and those representing animal welfare, and should assess and balance pain against the probability of benefits.

The RSPCA made clear its total opposition to any suffering in experimentation, and in a meeting with the Minister concerned in February 1984, regretted the Government's proposal to continue to allow the infliction of 'severe' pain.

Alternatives to Experimentation with Live Animals

There are at least three definitions of humane alternative techniques:

- those techniques which *replace* experimental animals (the use of sophisticated

[4] *Toxicology* 1979, 15/1.
[5] *Br.J. Pharmac.* 1980, 70.
[6] *Br. J. Exp. Path. 1980, 61.*

dummies instead of living animals in car crash studies is but one example of how imaginative scientists have created new techniques which avoid terrible suffering);
- those techniques which *reduce* the use of animals;
- those techniques which reduce or abolish pain or other suffering.

All three definitions have validity.

Using computer models of bodily function, physical models or films for teaching purposes, tissue cultures (i.e. growing living cells in a test tube), organ cultures, gas chromatography and mass spectrometry are all examples of techniques which have had the effect of successfully replacing some animals in research. Many of these techniques are more accurate and less expensive than using animals. Others need further research and development in order to become as good as existing methods. Some, like the simple culturing of human cells, are inexpensive, while others require the purchase of new equipment which can be costly.

One of the great drawbacks of tissue culture has been the need to test new substances on all the systems of the body working together. A substance which is not poisonous to cells alone may become so after it is transformed by the liver, for example, into a new substance. On the other hand, what is poisonous to one species of animal may not affect another species. Rats and mice can react quite differently to the same substance. So can the human animal.

In 1980 Professor George Teeling-Smith wrote on the subject of statutory toxicity (poison) testing on animals in a paper entitled *A Question of Balance* (published by the Association of the British Pharmaceutical Industry):

> The statutory bodies such as the Committee on Safety of Medicines which require these tests do so largely as an act of faith rather than on hard scientific grounds.
> With thalidomide, for example, it is only possible to produce the specific deformities in a very small number of species of animal. In this particular case, therefore, it is unlikely that specific tests in pregnant animals would have given the necessary warning: the right species would probably never have been used. Even more strikingly, the practolol adverse reactions have not been reproducible in any species of animal except man. Conversely, penicillin in very small doses is fatal to guinea pigs. If it had been tested in those animals before being given to man, its systemic use in humans might well have been considered too hazardous and unethical.
> Hence the first problem in minimizing risks with new medicines is the difficulty inherent in trying to predict adverse reactions in man from studies in experimental animals. The present tendency is to ask for more and longer animal tests merely in the hope that they may somehow make medicines safer. It has to be remembered that in addition they do three things. First, they will in some cases rule out the human use of medicines which would in fact be safe and valuable. Second, more predictably, they delay the introduction of all new medicines. Third, they add enormously to their cost.

The undoubted advantage of the tissue-culture approach is that it can use *human* cells cultured in the test tube. Moreover, it can use different types of living human cell and even diseased cells, such as human cancer cells removed during routine surgery.

Some of the heaviest users of animals are the firms which carry out routine toxicity testing of new products. The cruel and clumsy LD50 test involves dosing animals with large doses of cosmetics or drugs, weed-killers or consumer products, in order to see what dose kills 50 per cent of the animals within a certain time (for example, fourteen days). Scientists attach little importance to the results of such crude procedures, yet bureaucracies still obstinately and cruelly refuse to channel research funds into developing better alternative and humane techniques. The Draize test (applying substances to the eyes of animals) is a similarly primitive procedure.

Another case is the testing of products for their carcinogenic (cancer-forming) potential. Thousands of animals perish miserably each year despite the fact that *human* cancer tumours cannot satisfactorily be produced in other species.

In 1976 some ICI scientists reported important evidence in *Nature,* 16 December, to show that several cheap and humane procedures constitute an accurate method of screening substances for carcino-genicity. They concluded that their results 'clearly establish that the Ames Test and the Cell Transformation Assay are both able to detect a high percentage of a wide range of carcinogens while also generating an acceptably low level of false positives'. In plain words, the safety of products (that is, concerning carcinogenicity) can be tested by using humane test-tube methods.

In 1978 the late Professor D. H. Smyth published the results of his survey of humane alternatives carried out for the Research Defence Society, *Alternatives to Animal Experiments.* He widened his definition of 'alternatives' to cover 'experiments on animals not causing pain or distress'. Smyth called for a body to be set up to collate reliable information on the subject and recommended that industry and Government should spend money on investigating the literature, particularly with regard to toxicity testing; projects should be funded to find an alternative to the Draize test, and to encourage the development of Immunoassay, which Smyth described as 'one potentially very useful alternative'.

In 1979 a workshop was held in Montreal under the auspices of the Canadian Society for Prevention of Cruelty to Animals, which published its findings the following year. This workshop reviewed the field of *in vitro* methods, concluded that many offered great potential and urged Governments and research organizations to devote more funds towards the development and validation of these techniques.

While it would be wise not to exaggerate the applicability of non-sentient alternative techniques as they exist at the present time, it cannot be denied that the twentieth century has seen many instances of the rapid development of technologies from small beginnings. Within a lifetime human beings have learned to fly and have reached the moon. In the matter of alternatives to laboratory animals we are at the beginning, but the potential is surely there - all that is needed is the political, commercial, legal or moral incentive. If scientists cannot mend their morals, then the laws may have to provide that final impetus to oblige experimenters to develop humane methods. Necessity has, after all, so often found herself pregnant with invention.

Debates on Tactics

The growth of direct tactics in animal liberation has caused disputes within the movement about the morality and effectiveness of sabotage to laboratories, the freeing of animals and attacks upon the personal property of experimenters. In most countries the animal liberation hard-liners have observed a self-imposed moral code, which has meant that they have purposefully harmed no living creature, human or non-human. Some, however, have had no qualms about attacking property, especially that associated with vivisection.

The frequently voiced objection to such tactics from the traditional animal welfarist is that they are 'counter-productive'. Yet any historian knows that in some earlier reform movements little progress was made until illegal and sometimes violent acts occurred. Whether reforms would have been achieved without the direct action of the suffragists, for example, or whether they would have been achieved more slowly, are matters for conjecture.

There is no doubt that experimenters have felt directly threatened by the militants, though

they may sometimes have exaggerated the physical dangers posed by such groups. Admittedly, in 1982 and 1983 a series of small-scale letter bombs were sent to political leaders in Britain, allegedly from an animal rights organization. But the reaction of every genuine animal rights group in the country was one of outrage and condemnation. Indeed, many suggested that the bombs were sent by fanatics on the other side of the argument as an attempt to discredit the movement at a crucial juncture in the campaign to ban Canadian baby seal imports into the European Community.

Various right-wing commentators have seen the animal liberation movement as some sort of left-wing conspiracy. Yet no evidence has appeared of any ulterior political motivation. Few in the movement have had prior experience as political activists in any party. Certainly, however, the British movement has been associated in recent years with the parties of the centre and the left - the Labour, Social Democrat and Liberal parties. This has marked a change from the animal welfare movement of previous decades which had become very middle-class and conservative, a phenomenon deriving from the highly respectable position attained by the promotion of animal welfare in late Victorian society. Prior to the 1970s in Britain centre and left-wing politicians tended to scorn animal welfare, and some viewed it as middle-class sentimentality - a preference for pets over people. This outlook was gradually changed by the new campaigns of the 1970s, the spate of serious publications on the subject and the deliberate attempt to 'put animals into polities'.

These successful campaigns were won by neither the political nor the militant action approaches on their own. Both techniques played their part. It remains true that mass movements for change benefit from a full range of positions (from reform to abolition) and from a full spectrum of tactics (from political debate to direct action).

The question has also arisen of when, if ever, it is right for a campaigner to compromise with the forces of the status quo. The answer is complex, and although dialogue with Governments, and even with opposing forces, is usually desirable, it is wrong to confuse the role of the campaigner with that of a sovereign state in international diplomacy. It is probable that, unlike a sovereign state, the pressure group can only gain and has nothing much to lose. Thejob of a pressure group therefore is to press and not to negotiate.

This does not rule out of the pressure process rational argument, expressions of gratitude, civilized behaviour or even a graduated approach to reform. But it means that the making of concessions by animal protection groups in discussions with a Government is irrelevant except to the latter, which can then portray the agreement as support for its actions or lack of them. The pressure group, unlike a foreign Government, cannot make a trade deal or treaty which is of any real consequence in national terms. Thus it is an unfortunate reality that in pressure-group politics (far more than in business or diplomacy) the stick counts for more than the carrot. Compromise by a pressure group, especially premature compromise when the tide of public opinion is flowing strongly in favour of the aims of the pressure group, is an unnecessary waste of effort at best and at worst will be seized upon and exploited by the Government for its own ends.

Governments move only when pressed; when the pressure is released they cease to move. In the case of modern pressure-group politics the principal tools of the trade are media attention, the arousal and targeting of public opinion and direct approaches to Government and politicians.

The classical example of this in animal politics was the stopping of the slaughter of grey and common seals in Scotland in 1978. First, Greenpeace boats confronted the sealers and thus caught the attention of the media. The International Fund for Animal Welfare made the next major move by placing whole-page advertisements in the British press telling members of the public to 'Write to the Prime Minister'. (This caused Mr Callaghan to receive some 17,000 letters

on this topic in one week — the most ever received on one subject by any Prime Minister in such a short period.) Finally, I led an RSPCA deputation to the Secretary of State bearing some scientific findings which cast an element of doubt upon the scientific research of the Government; this duly helped to provide the Government with the excuse it by then needed to call off the seal slaughter. In this campaign the three elements (direct action attracting the media, the channelling of already aroused public feeling and high-level political contact providing a face-saver for the Government) all worked perfectly together. Furthermore, the refusal of the RSPCA to condone the seal slaughter, even in the slightest degree, helped to make the Government's position untenable.

The old argument has also raged about whether half a loaf of progress today is better than waiting for the full loaf at some uncertain time in the future. This argument has been complicated by doubt as to whether legislative half-measures should be regarded as paving the way for more sweeping reforms or whether they merely take the wind out of the sails of the campaign and give Governments the excuse to do nothing for a few years. On an issue like animal experimentation, where publicity invariably rouses public opinion on the side of the animals, the former point of view is probably more correct, especially as moderate (as opposed to extreme) reforms may not provoke strong and effective opposition.

However, although legislative half-measures are probably better than nothing, this does not mean that they should be quietly accepted by reformers as the end of the road. Instead, campaigners should see them as stepping stones on the way and should maintain their pressure for further progress.