

nature neuroscience

Science and terrorism in Europe

The animal rights movement, particularly in its more extreme manifestations, has been a long-standing thorn in the side of the biomedical research community, but the problem has taken on a new urgency in the last few weeks, with renewed death threats being made against two prominent European neuroscientists, Colin Blakemore of Oxford University and Wolf Singer of the Max-Planck Institute in Frankfurt. Such threats are of course deplorable in any context, but they are particularly disturbing because Blakemore and Singer are among the few neuroscientists who have been willing to publicly defend the use of animals in their own research. By targeting them, the animal rights extremists are attempting to silence public debate, at a time when newly elected governments in both Britain and Germany appear to be more sympathetic than their predecessors to the animal rights movement, making it more important than ever that scientists should make their voices heard.

The animal rights movement, like the anti-abortion movement in the USA, comprises a broad range of opinions and tactics, ranging from legitimate political activity to violent extremism. The extreme end of the spectrum is represented primarily by the Animal Liberation Front (ALF), a loosely organized group that originated in Britain and now extends to many countries in both Europe and North America, helped in part by the internet, which allows easy sharing of information about potential targets and tactics. The ALF home page (<http://www.animal-liberation.net>), for example, sets the tone with the statement: "The earth is not dying, it is being killed. And those that are killing it have names and addresses."

The group operates under a variety of names — for instance the 'Animal Rights Militia' and the 'Justice Department' — but these are generally thought to be flags of convenience only. Recently, dramatic insight into the tactics of the ALF came from a British television documentary, in which an infiltrator posing as a potential recruit filmed several of their leaders with a hidden camera. Among these was Robin Webb, press officer for the British ALF and its most prominent spokesman; although Webb has often denied ALF involvement in acts of violence, the film showed him giving detailed instructions on how to construct letter bombs. In the early 1990s, the ALF conducted an extended bombing campaign against scientists in Britain, and although nobody was killed and most of the bombs were fairly crude, some included plastic explosives and were undoubtedly life-threatening. As a result of these attacks, Blakemore, one of the most prominent targets, is now forced to live under heavy security.

The latest crisis in Britain arose when an animal rights activist named Barry Horne, who is serving an 18-year prison sentence for a series of arson attacks, began a hunger strike last October.

The ALF announced that if Horne died, ten people would be assassinated in retribution; among the named targets were Blakemore and Mark Matfield, the president of the Research Defence Society, a London-based biomedical advocacy organization. The crisis was averted when Horne called off his strike after 68 days, and while it was not clear that he had intended to kill himself (he had in fact been taking some food), the effect was to trigger a wave of protests and acts of vandalism in Britain and elsewhere.

The German animal rights movement has never been as violent as its British counterpart, but it is nevertheless active and influential, "a close second" to the British movement, according to Matfield. Singer, like Blakemore, has received many threats in the past, and has been the target of a persistent campaign of vilification and misinformation; for instance, he says that German web sites provide translations of his publications, in which experimental details are distorted, for instance by omitting any mention of anesthesia.

Singer's former student Andreas Kreiter has also been targeted by a similar campaign. Kreiter is now a faculty member at the University of Bremen, where he studies visual cortical physiology in awake behaving monkeys. Soon after he had accepted the position in Bremen, a large advertisement appeared on a billboard in the city center, announcing that Kreiter was a "monkey-torturer" and giving his home address and telephone number. This triggered an intense campaign of protest, in which Kreiter received hundreds of letters from all over Germany. Some were threatening, and on at least one occasion there was an attempted attack on his laboratory. He is now forced to conceal his new address, and since the summer of 1997 he has been under daily police protection. Kreiter attributes this campaign in part to the Deutscher Tierschutzbund (German Association for the Protection of Animals), a large and influential national organization whose charismatic leader, Wolfgang Apel, happens to live in Bremen.

Although Kreiter says that his fellow neurobiologists have been sympathetic, he has been dismayed by the lukewarm support he has received from the university authorities, who he feels have failed to take a clear stand against the protesters. Many of his colleagues in other departments, he says, are ignorant of animal research issues, and some are openly hostile; over a hundred faculty members at the university recently signed a memorandum demanding that he cease his experiments. The local media have also been unsympathetic, and on one occasion quoted without comment a comparison to Josef Mengele, the infamous doctor of Auschwitz.

It is tempting to see these campaigns as the work of extremists who are isolated from the rest of society, but this would be to underestimate the extent of public sympathy for the aims, if not the tactics, of the animal rights movement. Blakemore

believes that the latest crisis in Britain was due at least in part to the actions of the Labour party, who during the 1997 election campaign promised to adopt a more stringent policy toward animal research. To some extent they have already done so, and new rules requiring local as well as central approval for animal protocols will take effect from April this year; nevertheless, the changes did not go far enough to satisfy some supporters, and the result was a backlash from extremists whose hopes had been falsely raised. Although the government's position has been hardened to some extent by the need to resist terrorism, the animal rights issue remains on the political agenda. Among those voicing their concern is Michael Dexter, the director of the Wellcome Trust, who comments that the government is still under "tremendous pressure" from the animal rights movement, and that scientists must "stand up and be counted". He has recently written to the Home Office minister, George Howarth, urging the government to "adopt a cautious approach and avoid issuing a statement that could be interpreted as a commitment to further reduce and ultimately eliminate animal use for medical research".

In Germany, the political situation is more threatening; in late January a bill will be introduced into the parliament that would amend the constitution to give protection to animals. Although the final text has not yet been agreed, the majority of political parties support some form of amendment. The main opposition comes from the conservative Christian Democrats, but following their recent electoral defeat, it is unclear whether there will be enough votes in parliament to block the measure. According to Jan Erik Bohling of the Gesellschaft Gesundheit und Forschung (Society for Health and Research), a Frankfurt-based lobby group, the amendment will be debated in the next few months and could be approved as early as the end of April. Bohling, along with many scientists, believes that this will be potentially very damaging to German biomedical research; although freedom of research is currently protected under the constitution, the elevation of animal rights to constitutional level will open the door to a protracted series of court battles, and long before research is banned outright, it will become so difficult that researchers will have little choice but to leave the country. Many researchers are also concerned about what they perceive as a lack of support by the government. Reinhard Grunwald, secretary general of the Deutsche Forschungsgemeinschaft (DFG; the main government funding agency), was recently quoted in *Nature* as saying, "A constitutional change would not be necessary if researchers limited their animal experiments to those that are really important". This has caused consternation in the research community because it could be construed as an accusation of illegal behavior, given that only essential experiments are permitted under German law. Grunwald, however, now claims that he was misquoted, and says that the DFG plans to make a public statement by the end of January opposing any amendment to the constitution.

The underlying problem, of course, is that scientists have been relatively ineffectual in explaining and defending their work to the public. Opposition to animal experimentation draws support from a widespread public distrust of science and technology, and animal rights activists tend to be allied to a broad range of causes, including opposition to animal farming and meat consumption, genetic engineering of crops, hunting and environmental destruction. Many of these causes enjoy wide support (including that of many scientists), and as a result science finds itself on the defensive against a broad sector of public opinion.

The issues have to be brought into sharper focus if the biomedical community is to defend itself effectively.

But the unpalatable truth is that terrorism works — the campaigns of the extremists are sufficiently threatening that few scientists are willing to speak out. By targeting those who do, the ALF seeks to ensure that the arguments in favor of animal research are not heard. If more individual scientists were to make their case in public, the threat to any one person would be diluted; Matfield points out that the ALF, despite its violent posturing, has never actually killed anyone, and were they to do so, they would face an enormous public backlash. Yet, it is understandable that few people want to take the risk of being the first to speak out.

The degree of public ignorance, and its reflection in government policy, testify to this reluctance. Singer, for instance, says he is appalled by the lack of information about biomedical research that he encounters routinely even among highly educated people. The potential consequences of this dismal situation are illustrated by the experience of Switzerland, which last year narrowly escaped a 'yes' vote in a national referendum that would have banned all research on transgenic animals, and by the current situation in Germany, where the future of animal experiments is currently very much in the balance.

Few neuroscientists would deny that the use of animals in research raises legitimate ethical questions; arguably, these are more acute in the case of neuroscience than for any other discipline. The brain cannot be studied simply by looking at its parts (for instance in tissue culture), and certain questions about the human brain can only be answered studying the brains of closely related species. But these are also the species which seem likely to have the greatest capacity for pain, fear and other forms of suffering, and for which the ethical dilemma is therefore most pressing.

How then should neuroscientists defend their work? On the one hand, there are practical issues; animal experiments are tightly regulated by law, and researchers are normally very careful not to cause unnecessary suffering to their experimental subjects. Standards of laboratory animal care are undoubtedly better now than they were in the past, and it would be foolish to deny that these improvements are in part a response to the valid concerns of animal rights advocates. Moreover, researchers have strong financial as well as ethical motives for minimizing the number of experimental animals used, and the number of animals used in research has been falling steadily for many years. Another important point, not widely appreciated, is that some of the experiments that the public finds most troubling, those involving awake behaving monkeys, in fact require that the animals be in good health psychologically as well as physically; the monkeys must be calm and willing participants if the experiment is to succeed.

But if biomedical research is to be secure in the long term, the public must approve not only its methods but also its goals. In cases where there is a strong focus on a specific disease, the argument is relatively easy to make. Much current research in neuroscience, however, is concerned with more basic questions, whose relevance to human welfare remains to be established, and whose likely benefits lie in the distant future. The arguments for this type of research are more difficult to convey in a short soundbite, but Singer puts it well: since we left the Garden of Eden, he says, humans have been responsible for their own fate, and with that responsibility comes the obligation to understand, a moral obligation to be curious about ourselves and our world. That is the message that neuroscientists must get across, and they must not allow its communication to be prevented by the fear of terrorism.