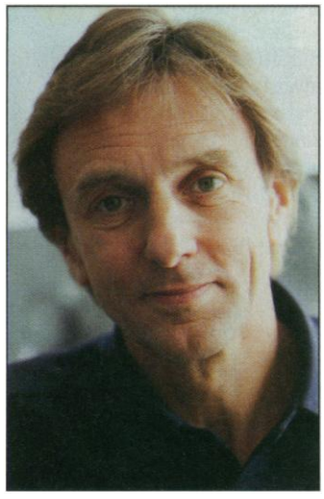
Following a peak in animal rights extremism last year, researchers are now working to defuse the confrontation through concessions, better PR, and bringing the activists to the meeting table

European Researchers Grapple With Animal Rights

BREMEN—In a building surrounded by a chain-link fence topped with razor wire, neuroscientist Andreas Kreiter conducts his experiments in an atmosphere more akin to that of a top-secret weapons lab than a university research institute. The reason for the security: Kreiter and his laboratory have been the target of attacks and threats by animal rights activists for more than 2 years. A 3-meter-wide poster set up in downtown Bremen in 1997 branded him a "monkey torturer" and listed his home and lab addresses. Both he and his family have been subjected to death threats, and armed police escort him when he makes public appearances.

Across the North Sea, in the normally peaceful atmosphere of Oxford University, physiologist Colin Blakemore—who uses laboratory animals to research brain development and cognition—has been beaten up by animal rights guerrillas and has been the target of letter bombs mailed to his home. Blakemore has been forced to install high fences, electronic detectors, and other security measures at his home to protect himself and his family. He says that defending himself and his work from such threats "has taken 3 or 4 years out of my research" since he was first threatened a dozen years ago.



As the number one targets for activists in Germany and Britain, Kreiter and Blakemore are at the sharp end of European researchers' struggle against animal rights extremism. They are far from alone. Dozens of other scientists in northern Europe who are outspoken in defending their animal research have found themselves slandered on Web sites, attacked by demonstrators, or have had their labs damaged or disrupted by guerrilla assaults. "Some of these groups are vitriolic, and you have to worry about the threats," says Denis Duboule, a developmental biologist at the University of Geneva who uses mice in his research. When he received an award for his work last year, activists tried to disrupt the ceremony, demonstrated at Duboule's lab, and spray-painted a warning on his home.

The United Kingdom and Germany have some of the strictest animal protection regulations in the world and have long had active animal rights movements whose militancy has waxed and waned over past decades. In contrast to the United States, where animal rights activism has been in a lull in recent years, extremism surged in both countries last fall. In Britain, militant activist Barry Horne—in jail for firebombing shops he felt had supported animal experimentation—held a hunger strike in a widely publicized effort to win concessions from the government. British newspapers reported assassination threats by militant groups against researchers, including Blakemore, and others if Horne died. (He called off his hunger strike when he was near death.) In Germany, Kreiter and his research mentor—neuroscientist Wolf Singer, a director of the Max Planck Institute for Brain Research in Frankfurt—were also the targets of highly publicized threats. Max Planck president Hubert Markl called such intimidation "an attack on the freedom of research in Germany."

> **"Somebody has to fight this fight, or the victory goes by default to the opposition."**
>
> **—Colin Blakemore**

This heightened tension turned animal protection into a hot political issue. It also spurred efforts to blunt the tactics of the extremists and find common ground with moderate animal welfare advocates. Across the continent, bodies such as the European Union, the European Science Foundation, and Britain's Royal Society have commissioned reports or convened meetings to study and debate the issue. A British initiative to bring researchers and animal rights activists together to hammer out their differences may be followed in other countries. And in Germany, some mainstream political parties are backing a constitutional amendment that would guarantee animal rights—a move that is causing consternation among many researchers.

The tensions have abated recently, perhaps in part because of these developments. Britain's Scotland Yard set up a special police unit to investigate violent animal rights terrorists, and police crackdowns in both countries have succeeded in arresting some of the most violent activists. "The animal rights militants have been shifting lately to more focused demonstrations, targeting specific places, such as the breeders of laboratory animals," says Mark Matfield, who heads Britain's Research Defence Society and is also director of the European Biomedical Research Association, which represents similar groups that support researchers in 22 countries. In the most recent attacks, militants have targeted Britain's only commercial breeder of cats for research, Hillgrove Farm. "But these are just changes in tactics, not in the activists' ultimate goal of eliminating the use of animals in research," Matfield adds. As one scientist says, "we are in the calm before the next storm."

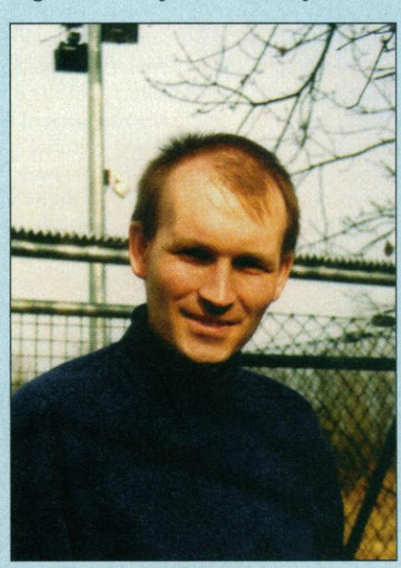
War of words

The surge in animal rights militancy last year provoked a wide range of responses among both researchers and European governments. One reaction was the urge to fight back—in the war of words at least. The animal rights movement is winning public sympathy, researchers argue, by distorting the truth about animal research and ignoring the benefits it brings.

Doing Research Under Siege

BREMEN—Andreas Kreiter is puzzled by the notoriety that now surrounds his work. He was quite open about his research plans when the University of Bremen hired him in 1996, and the brain research he now carries out on macaques has not only been through the mill of Germany's strict animal experimentation regulations, but it also uses standard procedures practiced by neuroscientists elsewhere. "We try to keep them active," he says, pointing to four young macaques clambering over rope nets, adding that healthy animals are essential for his research.

Kreiter, who heads a research team at the university's Center for Cognitive Neuroscience, studies the synchronization between nerve cells that are important in coding information in the brain. In his experiments with macaques—standard subjects for this kind of research—scientists surgically place an implant on the monkeys' skulls, using a small cylindrical tube through which hair-thin electrodes are inserted into the brain. Neural activity is measured while the monkeys carry out certain tasks. Kreiter says that the implants may look odd, but they "do not hurt or bother the monkeys," and inserting the electrodes "is a painless procedure; the brain has no pain receptors." He notes that "there are many U.S. scientists working with the same species of monkeys, and the techniques used for this type of brain research are almost identical everywhere."



Behind the wire. Andreas Kreiter has to fortify his neuroscience lab against attacks.

All was normal in his lab, Kreiter says, until April 1997, when there was a sudden "explosion of opposition." Animal rights activists threw red paint at a lab that they thought was his and set up a defamatory poster of Kreiter on a downtown street, listing his home and lab addresses. Six months later, he needed police protection, because demonstrators were lined up outside his office.

Since then, Kreiter has been the prime target of the German animal rights movement, in part, he believes, simply because the head of Germany's biggest animal welfare group (the Deutsche Tierschutzbund) also lives in Bremen. "They spread horror tales in the local newspapers," says Kreiter. "It steals a lot of my research time, and the controversy preoccupies me. ... In the first few months, I would be worrying all the time: Is my house still standing? Are my children OK?"

Soon it was not just the animal activists he had to worry about. Last fall, about 100 faculty members at Bremen University signed a petition opposing Kreiter's research. This was swiftly followed by a counterpetition signed by dozens of other Bremen professors supporting him. As the attacks and threats continued, the wider neuroscience community became involved. Earlier this year, nearly 50 U.S. and other international neuroscientists—including two Nobel laureates—signed a petition supporting Kreiter, calling him "a respected investigator in the field of systems and cognitive neuroscience. ... The use of alert, behaving monkeys, which is the experimental preparation at issue in Professor Kreiter's case, is one of the best approaches currently at our disposal for addressing questions about the biological basis of higher brain functions."

The controversy has made it harder for him to carry out his research. "This makes it more difficult to hire talented young scientists. If one has a choice between a lab that is under attack and one that is not, then which lab would you choose?" And his lab and offices, which were originally going to be in the main biology building, were instead assigned by the university to a more remote, older building less vulnerable to attack.

Meanwhile, Kreiter worries that the continued pressure and debates over the use of laboratory animals are harming German science. "It's not so much that established scientists are leaving Germany but that talented postdocs often stay abroad, in the U.S. or elsewhere," he says. "Many of the postdocs just don't come back." **–R.K.**

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Ernst-Ludwig Winnacker, president of Germany's DFG basic research granting agency, says that about 80% of Germans surveyed in a recent poll said they oppose the use of animals for lab research; but when asked more specifically, a solid majority said they support such experimentation if it provides benefits for human medicine. A poll last month commissioned by Britain's *New Scientist* magazine found that 64% of 2009 people surveyed initially said they disagreed with animal experimentation, but when shown how such research would likely hasten progress in medicine, a slim majority favored such research.

In early May, Ivar Aune, director of Germany's main lobbying group on behalf of researchers, the Gesellschaft Gesundheit und Forschung, told the Scandinavian Society for Laboratory Animal Science that researchers and the groups that represent them must take a more proactive approach to countering animal rights activism, by responding to inaccurate claims, providing accurate information to the public, and making their views known to key decision-makers. In May, the Royal Society's animal experiments committee met to discuss possible efforts to explain the position of science on the issue to the general public.

A second response was to try to build bridges between researchers and animal activists. The British Home Office, which regulates animal experimentation, announced last month that it will sponsor a major forum in London on 9 July devoted to science and animal welfare—with participants including representatives from many of Britain's main research organizations and animal welfare groups. A special unit created a few years ago by the European Union—the European Centre for the Validation of Alternative Methods (ECVAM)—is working to promote dialogue among legislators, industries, biomedical scientists, consumer organizations, and animal welfare groups, to help develop and validate alternative test methods for research that would reduce, refine, or replace the use of lab animals. "The prospects for making steady progress are very good," says ECVAM's director, Michael Balls, but he adds that "many individuals, especially in government and in animal welfare, have unrealistic expectations of the rate at which progress can be made in replacing current animal procedures."

But perhaps the most ambitious attempt to defuse tensions between animal rights groups and researchers is the Boyd Group. This initiative, begun in 1992 by Blakemore and Scottish animal welfare activist Les Ward, director of the moderate Advocates for Animals campaign, convenes meetings of representatives from both sides of the debate—such as the Royal

Getting a Measure of the Problem

Statistics on animal experimentation in Europe as a whole are sketchy, but it is clear that the number of animals used for laboratory research in most countries has dropped substantially over the past 20 years. In Switzerland, the Federal Veterinary Office reports that the number of animals used for experiments declined from 2 million in 1983 to 510,000 in 1996. In Germany, the numbers dropped 40% between 1989 and 1997 to less than 1.5 million. And British researchers used 2.6 million laboratory animals in 1997—about half the number of lab animals used in the 1970s. Europe-wide, a new method for generating European Union statistics on laboratory animal use was agreed on in 1997, and the first set of new statistics should be published in a year or so.

The downward trend is in part due to increasingly strict laws governing animal experimentation in northern and central Europe. Although regulations and procedures vary greatly from country to country and are not directly comparable, Mark Matfield, director of the European Biomedical Research Association, says Britain's law is the strictest, with personal licenses for research requiring time-consuming permission from both local and national authorities. "It can take up to a year" for British researchers to get such approval, Matfield says.

Aside from the United Kingdom, researchers consider Switzerland and Germany to have Europe's strictest laws governing animal research. According to Ivar Aune, director of Germany's main lobbying group on behalf of researchers, "the Swiss laws may be stricter, but German officials seem to be more demanding in enforcing the laws." Although rigorous, German regulations were altered last year and now require local boards to make the decisions on applications to use lab animals within 3 months.

Despite the tightening rules surrounding the use of lab animals, many researchers who spoke with *Science* felt that the downward trend in animal numbers is leveling off and may begin to rise slightly again. Contends Andreas Kreiter of the University of Bremen: "All possible compromises have been made, of course always to the detriment of science." **–R.K.**

Medical Colleges, the Wellcome Trust, the Medical Research Council, the British Association for the Advancement of Science, mainstream animal welfare and animal rights organizations, medical ethicists, and philosophers—to discuss issues and try to find some common ground. "We have tried to build some bridges," says Ward, who advocates the eventual ending of all experimentation with animals. "This is a forum where both sides—rather than slugging it out in the media—can sit around a table and find some issues on which we can agree to reduce the pain and suffering of animals."

Although the group has reached general agreement in the past on issues such as animal experimentation for new cosmetic ingredients, a working group—which includes Ward and Blakemore—is now trying to find common ground on the tougher issue of primate research. "The Boyd Group is important," says Blakemore, who would like to draw in representatives of more militant animal rights groups. "If you come face to face with a rational person and sit down and discuss a contentious issue, that defuses the potential violence and elevates the quality of debate."

An effort is also under way to establish a continental group—the "European Consensus Platform on Alternative Methods"—that would include representatives of government ministries, universities, animal welfare groups, and industries that use animals for research (mainly pharmaceutical, chemical, and cosmetics firms). A leader of that effort, Bernward Garthoff of Germany's Bayer AG drug and agrochemical firm, says he expects the new organization to begin with existing groups in Germany, Belgium, and the Netherlands. But it may expand later to include other nations, and it is applying for a "networking" grant under the European Union's Framework 5 Program. One goal of the platform group would be to identify further possible changes in global legal requirements for industrial-product testing that would decrease the number of animals required for experiments.

Meeting halfway

Yet another approach is to make concessions to the animal rights movement to try to draw support away from the more violent militants. Soon after its election 2 years ago, the British Labour government made some symbolic moves to assuage animal welfare groups, such as banning the use of animals to test new ingredients for cosmetics and for alcohol and tobacco products. But, Blakemore says, the government "has not really drawn the line" in defense of animal use for "the core areas of biomedical research where it is essential."

Politicians in Germany, however, are now considering a more risky strategy, which is stirring up the research community. Supported by animal welfare groups, an array of politicians is backing a constitutional amendment that would guarantee the welfare of animals. Although the wording of the proposed amendment is bland, Kreiter and other researchers contend that it could give animal rights groups the power to force many German researchers to go to court to gain approval for their projects. "This would make it more difficult to perform some experiments, because animal-protection groups have said publicly that they would take legal action against researchers," says Winnacker of the DFG, which issued a statement this year opposing the amendment.

Even some German scientists who are active in protecting animals in research labs warn that a constitutional amendment would be harmful to research. Hansjoachim Hackbarth, a professor of animal welfare and behavior at the University of Hannover's veterinary school, told *Science* that the proposed constitutional change "would stop or delay a great deal of research in Germany for a long time"—at least until court challenges are sorted out. "I oppose this, but I expect the German parliament to approve the amendment later this year."

Indeed, that prospect is looking increasingly possible. In April, the German cabinet—a Social Democrat and Green Party coalition—endorsed the concept of a constitutional amendment, which is now being considered by a parliamentary committee. In the past, the main barrier to parliamentary approval of such an amendment has been the center-right Christian Democratic Union (CDU), which could block the amendment from gaining the required two-thirds majority in parliament. But former German research minister Jürgen Rüttgers and some other CDU leaders now support a watered-down version of the amendment, which scientists say might still lead to court challenges against research.

Despite efforts to tackle the problem, many biomedical scientists view with alarm the tightening noose of government restrictions and concessions made to the animal rights movement. "In Germany, it now seems to be easier to get permission for [an experimental] study involving humans than it is to get permission for animal experiments," says Kreiter. "The trend frightens me. I see a tendency to try to balance out animals against humans." He and Blakemore urge their fellow scientists to speak out forcefully against undue restrictions on research. Says Blakemore: "Somebody has to fight this fight, or the victory goes by default to the opposition. And that would have a terrible impact on science and medical care."

–ROBERT KOENIG