big science projects, research workers frequently express a preference for doing things nationally. Thus any rationalization is likely to be the result of pressure from the top—and the Versailles working groups, with their direct access to heads of government, currently appear the most appropriate channels through which such negotiations might be successfully carried out.

As for harmonizing standards, this is already proving easier to achieve in some fields than in others. One of the more straightforward is expected to involve agreement on common questions to be used as the basis of internationally comparable opinion surveys designed to assess public reactions to new technologies.

The working group addressing this topic was set up at the personal suggestion of British Prime Minister Margaret Thatcher during a brief brainstorming session at the Versailles summit. Despite some initial skepticism, substantial interest has already been shown by several other countries—particularly those from Europe, which is more politically sensitive than the United States to the social impacts of rapid technological change—and the largest of three British projects funded by the Department of Trade and Industry, that based at the Technical Change Center in London, is already drawing up a list of topics that might be used as the basis of an international survey.

Where commercial pressures between countries are nearer the surface, collaboration becomes more difficult. Such, for example, has already been the case of the working group in high-speed trains, led by West Germany and France.

Earlier this year the group held a well-attended meeting with representatives from several neighboring European countries at which the possible shape of a future high-speed passenger network in northern Europe—perhaps including even a tunnel link between England and France—was closely examined. Both these countries, however, have already made substantial R&D investments in their separate designs for advanced passenger trains, both are locked (with Japan) in highly competitive bidding for markets in the United States and elsewhere, and both are, in consequence, highly resistant to suggestions that they should pool their long-term research efforts.

It has been the reverse with the working group on advanced robotics. Here, French engineering experience and Japanese electronics are being linked together in a program aimed at eventually producing third generation "intelligent" robots suitable for working in hostile environments ranging from fires (in which the United States is said to have shown some interest) to the insides of nuclear power stations.

Those responsible for the Versailles initiative 2 years ago now feel sufficiently confident of the experience they have gained to venture into deeper water. One field which has so far received little attention, but which several governments are keen to receive more, is the environmental impact of new technologies. The final report of the Versailles group on its 1983–84 meetings, which was presented to the London summit, suggested this should receive closer attention in the future.

More controversial is the thorny question of commercial and military pressures to reduce the international flow of scientific information. This, too, is recommended for further examination, although here less in the expectation of any significant recommendations emerging from the group than in recognition of the need for a high-level forum at which different points of view can be expressed and critically analyzed.

There remains criticism of the groups' activities. Some point out that, although a few countries outside the summit group have joined some of the working groups (Austria, for example, is collaborating on the robot project), the club remains relatively elitist, with Third World countries getting little more than a nominal look in. Others complain that the internationalization of science policy in this way threatens to weaken legitimate national points of view, not all of which can be accommodated in the "variable geometry" which, according to CESTA's Stourdzé, is the principle on which the working groups operate.

Yet 2 years after the Versailles summit, as one British official puts it, "the amazing thing is that it is still there." And it is this continued existence which appears to confirm Stourdzé's claim that, for good or for ill, the initiative continues to look like "an idea whose time has come." —**DAVID DICKSON**

Lab Break-In Stirs Animal Welfare Debate

The theft of videotapes could further divide biomedical researchers and animal welfare activists

Over the Memorial Day weekend, five people representing the Animal Liberation Front (ALF), a loosely organized group of animal rights activists, broke into a laboratory at the University of Pennsylvania Medical School, damaged equipment, and stole 33 videotapes documenting head injury experiments involving baboons. Animal welfare groups have lodged complaints with the Department of Health and Human Services (HHS) alleging animal mistreatment by the Pennsylvania researchers. From a public relations standpoint, some scenes on the tapes—which were made for documenting the research, not for public viewing, range from embarrassing to disastrous.

This incident could further polarize the debate about the proper use of animals in research, possibly undermining the efforts of more moderate representatives from animal welfare groups to appeal widely to biomedical researchers. A sense of this polarization—and the frustration it is causing—became apparent during the recent meeting of the advisory committee to the director of the National Institutes of Health (NIH).

The meeting, which had been scheduled months in advance but followed the incident in Philadelphia by a few days, was devoted to a discussion of the use of animals in research. NIH officials described current efforts to amend guidelines for the care of research animals (*Science*, 27 April, p. 364). Although an effort was made to avoid focusing on the incident at Penn, it became a recurrent theme during the meeting, with reseachers outraged at the theft of data and destruction of valuable equipment, and animal welfare activists angered over the use of animals in experiments that of necessity produce injuries.

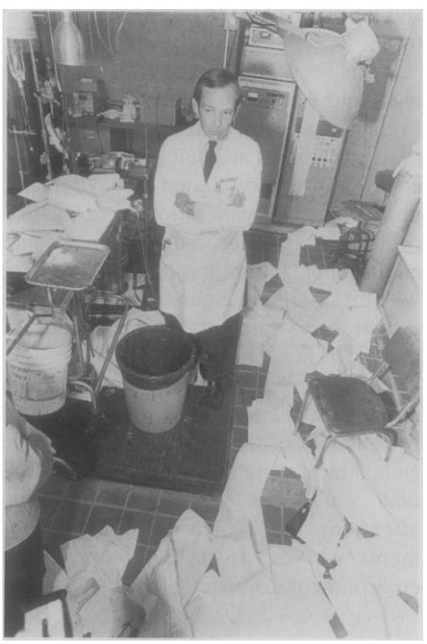
The University of Pennsylvania laboratory that was raided is part of a head injury research center, one of four such U.S. centers supported by NIH. The Penn program, which involves human and cellular studies, as well as experiments on baboons and other animals, has been funded continuously for 14 years by NIH and has consistently gotten high ratings by peer review committees. The Penn research group has been "one of the most productive for understanding . . . head injuries and for developing and evaluating improved methods" for treating them, says Murray Goldstein, director of the National Institute of Neurological and Communicative Disorders and Stroke (NINCDS), which oversees the program. He notes that the study of head injury, which is a "big national problem," is explicitly mandated by Congress.

The University of Pennsylvania team was built by Thomas Langfitt, who has become vice president for health affairs at the university, and includes as principal scientist Thomas A. Gennarelli, who joined the program about 10 years ago. Their work with baboons began about 4 years ago after experiments on other primates failed to produce comas resembling those that occur in man after accidental head injury.

The experiments entail subjecting the animals' heads, which are encased in helmets while the animals are restrained, to a sudden, jerking motion delivered by a specially designed piston. This trauma, which is like the whiplash that occurs in many automobile accidents, causes comas in baboons. The severity of the coma mirrors the force delivered to an animal's head, according to Langfitt. More important, the research is beginning to show that the degree of injury to axons—the long, narrow extensions that are peculiar to nerve cells—is also proportional to the severity of the coma. The group's current hypothesis is that some, and possibly much, of this damage might be reversible—a radical notion that, if borne out, could mean that many more head injury victims eventually could be restored to normal lives.

Animal rights groups supporting the break-in have raised three main objections to the research. They allege that there were violations of animal welfare procedures, such as not keeping surgical equipment sterile, smoking by researchers while handling the animals, and not adequately anesthetizing the animals. The also claim that the researchers showed "callousness" and "disdain" toward the animals. And, finally, they argue that public health needs would be better served by preventing head injuries than by conducting such research.

The leading figures for these groups are Holly Jensen of ALF and Ingrid Newkirk of People for the Ethical Treatment of Animals (PETA). Both groups have copied and distributed the videotapes taken from the lab, excerpts of which have been shown on many television stations. Jensen, who is a nurse in an intensive care unit in a Florida hospital, has taken a leading role on behalf of ALF explaining why the raid was undertaken. Newkirk and her colleagues at PETA are devoting a considerable effort not only to copying and distributing the videotapes but also to scrutinizing them to document the formal complaint they have filed with HHS alleging misconduct by the researchers.



G. Lowe Grossman

Thomas A. Gennarelli

Surveying the damage in lab at head injury research center at University of Pennsylvania Medical School.

"It is regrettable that it is only through severe confrontation that . . . you can be informed about violations of NIH assurances by the University of Pennsylvania," PETA said in a letter addressed to HHS Secretary Margaret Heckler, calling for an investigation of the Penn researchers. However, an NIH official notes that no formal complaint about the use of animals in this program had been filed prior to the Memorial Day incident. And University of Pennsylvania officials say that the experiments were reviewed repeatedly and found to conform to NIH guidelines.

Both PETA and ALF representatives also argue that research into head injuries is not productive, and that emphasizing preventive measures would be more beneficial to the public than is research. "Are we willing to put animals through that [procedure] when the American public won't put on seat belts?" Jensen says. Goldstein points out, however, that despite better safeguards, not all accidents causing head injuries can be prevented. And, more important, the extent to which even relatively minor brain injuries are treatable is extremely limited. The brain apparently sends out its own self-destructive message after an injury, he says, and there is no hope for deciphering that message without doing research, Goldstein notes.

But Jensen says that science "needs to have a broader sense" and that the idea that "human needs come first" is outdated. Moreover, although she and her colleagues invoke a need for improved ethics among researchers, she is not reluctant to admit that the Philadelphia raid entailed committing a felony and that its purpose was not to free animals but to serve the propaganda needs of the animal welfare movement. She and Newkirk justify these actions as following the tradition of civil disobedience. "I think there's a limit to what can be tolerated as civil disobedience," says NIH director James B. Wyngaarden. "I personally believe this break-in is a crime."

Langfitt estimates the physical damage to equipment and facilities to be as much as $20,000. Estimating the loss of data is more difficult, he told *Science*, in part because the lab was still in a shambles but also because he was still unsure which tapes were taken (there are no backups). Efforts are being made to increase security at the university, and the university and city police are undertaking a thorough investigation.

NIH officials say that a federally directed investigation of the treatment of animals in the university's head injury center is likely because of the publicity the incident has received. "We won't condone abuse [of the animals]," says Wyngaarden, "but I have to wait on more data before I'd contend there is abuse. We do support this research, [which] is regarded as important. This is [considered] to be one of the best labs in the world."

Regarding the wider debate taking place about the use of animals in research, Wyngaarden says, "Medical scientists in the country need to be more active explaining their research and why animals are necessary." In studying head injuries and many other medical problems, "There's not much you can do with bacteria."—JEFFREY L. FOX