Legislating an End to Animals in the Lab

A bill backed by animal-rights activists could all but outlaw federally funded research using cats, rats, dogs, rabbits . . .

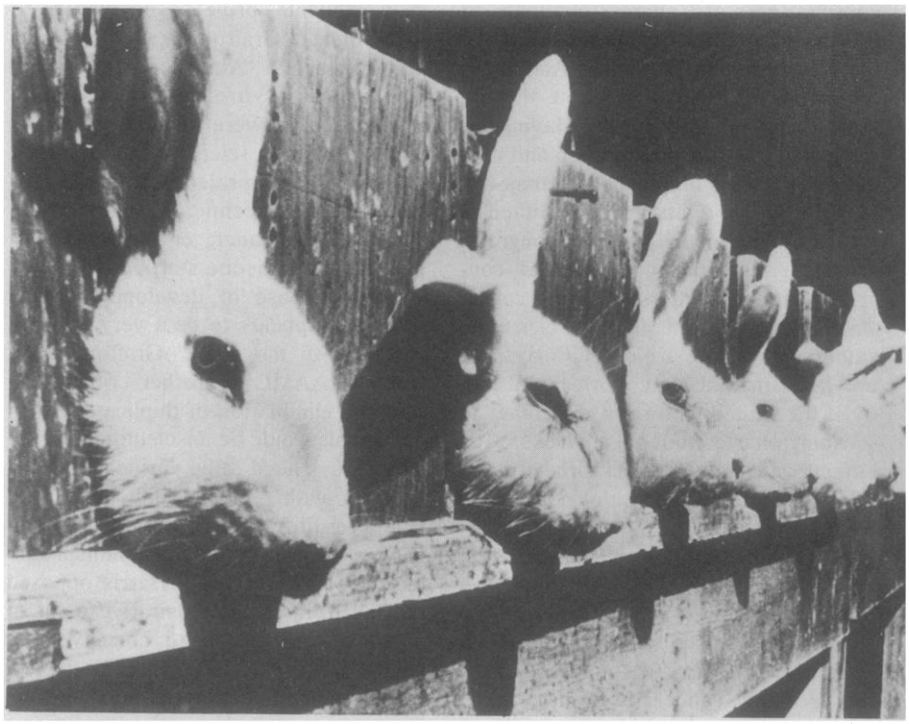
Dear Biomedical Researcher:

The Center for Alternative Research is sorry to inform you that your National Institutes of Health grant has been canceled. We have determined that your project using live rabbits and dogs might instead use computer simulations. The cancellation of projects such as yours has resulted in a fund for the development of non-animal research models that now has $750 million. We encourage you to apply for one of our grants.

Mere fantasy for the moment on the part of animal-rights activists and pet-lovers, a stopwork memo of this sort would be mailed out to thousands of NIH grant holders if a piece of legislation now picking up support on Capitol Hill becomes law. Those in the scientific establishment say the impact of such legislation would be catastrophic, yet passage of the bill is not an altogether impossible event. "We've been getting hundreds of letters on this, just hundreds," says an aide to a congressman not connected with the legislation. "It's unbelievable. We got ten letters on windfall profits and something like 600 so far on research modernization."

Introduced last summer by Frederick Richmond (D-N.Y.) and called the Research Modernization Act, HR 4805 would create a clearing house at NIH, called the Center for Alternative Research, that would disseminate information on alternatives to research on live animals. According to the bill, these include "mathematical models, isolated organs, tissue or cell cultures, chemical assays, anthropomorphic dummies, simulated tissues and body fluids, mechanical models, computer simulations, or lower organisms."

Along with a carrot, the Center could employ a stick. After placing descriptions of such alternative methods in the *Federal Register*, the Center could cut off funds to *any* federal project using live animals if the Center felt the project would be better served by non-animal methods. For projects found to be absolutely reliant on live animals, the Center would make sure only one such project was funded by federal dollars, all duplications being eliminated. The Center would also be empowered to direct up to 50 percent of all appropriations for animal-related research at NIH to the development of non-animal testing methods.



Awaiting a squirt of shampoo in one eye, these rabbits are victims of the cosmetic industry's attempt to determine product safety. Known as the Draize test, this eye-irritating experiment is often cited by animal-rights advocates as an example of needless suffering.

Since about $1.5 billion is spent every year on this research by NIH, the figure could amount to $750 million. "We're not trying to interfere with the quest for scientific knowledge, as some people claim," says Art Craig, an aide to Richmond. "Our main point is that there is an awful lot of unnecessary duplication of animal tests—that the feds are using animal testing even though there may exist proven alternative methods that are equally applicable to the public health. These alternative methods are not used simply because nobody is encouraging them."

Does the bill have a chance of passage? When first introduced, the Research Modernization Act looked so naïve and sweeping to many observers familiar with the intricacies of research on live animals that they did not give it a second thought. Since then, however, 52 cosponsors have signed onto the bill in the House, and the trickle of letters that representatives once received has turned into a torrent. Especially hard hit has been George E. Brown, Jr. (D-Calif.), chairman of the House subcommittee on science, research, and technology—one of the subcommittees where action on the bill is currently pending. No hearings have yet been scheduled, but Brown, who is regarded as "very interested in animal welfare" by the Massachusetts-based Research Animal Alliance, has sent out questionnaires to biomedical scientists asking their opinion of the legislation and of the replacement of in vivo testing with in vitro techniques. Brown

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has also stood up to Administration opposition. When Health, Education, and Welfare secretary Patricia Harris recently announced the department's opposition to the bill, Brown in response asked NIH to sponsor a national conference on alternatives to live animal research and to determine the "state of the art." NIH has agreed, and has tentatively scheduled such a symposium for this fall. "For the NIH to pretend that it is somehow isolated from what can become very emotional issues is unrealistic," says William Raub, associate director at NIH for extramural research and training. "We thought a review of the various strengths and limitations of animal research would be helpful to the scientific community at large and to the congressional committees in particular."

In the meantime, the animal-rights consciousness of Congress continues to rise, most notably through the efforts of the New York-based United Action for Animals—the group that wrote the bill that Richmond introduced. Having already captured the cooperation and thus the letter-writing abilities of the majority of U.S. animal-rights groups, United is now lobbying in the halls of Congress, arguing issues, trying to convert congressmen and staffers to their cause. "Nobody has said from a scientific standpoint that we are crazy," says Elinor Peretsman, a New York-based lobbyist for United who says she comes to Washington every couple of weeks. "It's bureaucratic slowness and force of habit that is holding up the use of non-animal methods."

An example that Peretsman and other animal-rights activists use quite frequently is the well-known Ames test, a bacterial assay used to test chemicals for their ability to produce mutations, and thus possibly cancer. It is mere habit, says Peretsman, that keeps more researchers from turning to bacterial and cell systems rather than rabbits and guinea pigs. When making this point to a congressional aide, Peretsman pulls out numerous reprints of articles, such as "Bacterial tests for potential carcinogens" in the August 1979 *Scientific American*.

To counter the animal-rights people, scientific societies of late have started a lobbying campaign of their own, albeit on a smaller scale. "This bill would have a catastrophic impact on biomedical research," wrote Thurman S. Grafton, executive director of the National Society for Medical Research, to the subcommittee. He said the expense, slow results, and poor reliability of animal tests is making alternatives more and more attractive, but that forced adoption would be disastrous, because even alternative methods such as the Ames test have to be verified on live animals. "Each alternative method is limited to the artificial conditions created within that method," he wrote the subcommittee. "The ultimate answer to many biological problems can only be determined in intact live animals or humans because of the complexity of interacting phenomena involving enzymes, hormones, natural defense mechanisms, and other biochemical and neurologic reactions."

Other complaints center on the millions of dollars that the legislation would reappropriate. "These funds," wrote Association of American Medical Colleges (AAMC) president John A. D. Cooper to the subcommittee, "are excessive in view of the probable number of worthwhile projects on which to spend them." Grafton takes this point a step further. "Almost without exception, the in vitro methods currently available to us were fortuitous spinoffs accomplished by scientists working on a specific research project who in the process developed techniques that were either faster, cheaper, or more reliable. The idea of someone starting out solely for the purpose of developing a new technique appears to be a very unlikely approach to the goal." Grafton, along with the AAMC and other critics, also says the elimination of duplicate testing on animals would be unscientific, as findings always need to be verified.

Along with "ethical difficulties that would result from the elimination of animal testing prior to testing in human subjects," HEW secretary Harris opposed the bill from an administrative point of view. "It is difficult to conceive that such a Center, located within this department, would effectively set policy for the Department of Defense, the Department of Agriculture, the Veterans Administration, and other agencies involved in biomedical research."

Given the increasing opposition, and the fact that it is rather late in the 96th Congress for a bill to have not yet had hearings, supporters of HR 4805 are having doubts about the bill's chances for passage. Some say it probably will not get through this session of Congress, but they are ready to continue the fight. "Something will be done," says Peretsman. "We've got 13 or 14 scientists at this point who are willing to testify. We may not get a hearing in this session of Congress, and the ultimate legislation that's passed may not be in the form of 4805, but we've taken the first step."—WILLIAM J. BROAD

Big Future for Synthetics

Some observers have predicted that high energy costs will spur a major reversion from synthetic petroleum-based materials back to natural ones. But the latest report from Worldwatch Institute says synthetic materials are here to stay and "their production may in fact be one of the last major uses for oil and natural gas."

The report, by Christopher Flavin, notes that synthetic materials—namely plastics, fibers, and rubber—have an unsavory side to their reputation, associated as they are with the artificial, throwaway side of modern culture. But the truth is that their net energy use is actually less than that of comparable products made from natural materials. To give one example: in 1978 a National Science Foundation study revealed that, although it takes 25 percent more energy to produce a cotton-polyester blend shirt than an all-cotton shirt, the life-cycle energy requirement of the cotton shirt is as much as 90 percent higher because it is less durable and requires more maintenance.

The report, on "The future of synthetic materials: The petroleum connection," notes that world use of synthetics is currently 100 times what it was in 1950. Ninety-eight percent of synthetics are made from oil and natural gas (the rest are from coal). Seven percent of the world's oil and natural gas production goes into synthetics manufacture: 3 percent into plastics, fibers, and rubber and 4 percent for fertilizers, pharmaceuticals, and industrial chemicals. Production of synthetics is rising at 10 percent a year, although the growth rate is expected to slow in the next decade because of rising oil and gas prices.

Clearly, more efficient use of synthetics is called for. A huge reduction in disposable plastics is possible. Right now, 25 percent of all plastics manufactured—or 4 million tons a year—goes for disposable packaging, and "the U.S. tendency to overpackage" is spreading to Third World countries as well as Europe and Japan. Vast improvements can also be made in recycling. Since most of the energy in synthetics manufacture goes into creating the polymer rather than the final product, up to 90 percent of the energy could be saved by re-

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