

Science, technology and human rights

A Congressman warns that scientists must press vigorously for the protection of all human rights—civil, political, economic, social and cultural—not just for humanitarian reasons, but for self-preservation as well.

Hon. George E. Brown, Jr.

Human rights do not simply consist of civil and political liberties; these rights are only part of the picture. There are also economic, social and cultural rights. These two sets of human rights are codified in the Universal Declaration of Human Rights of the United Nations and its two instrumental covenants: The International Covenant on Civil and Political Rights and the International Covenant on Economic, Social and Cultural Rights. The regional counterpart is the Organization of American States' American Convention on Human Rights. Just about every issue we deal with in Congress has a human rights component. That, I believe, is also true of science.

I am proud that our country was a leader in drafting these treaties, which form the basic international recognition of human rights. I also applaud President Carter for signing these covenants in 1977. Unfortunately, the Senate has not yet ratified these covenants. While many rights are contained in the US Constitution, the failure to ratify the covenants admits our refusal to concede that the human rights of US citizens are of international concern. It is precisely that international responsibility which gives legitimacy to our expression of concern over the abuse of human rights in other nations. Without that legitimacy we can be accused of simply meddling in the internal affairs of other nations.

The Preamble to the Universal Declaration asserts that:

Every individual, every organ of society... shall strive by teaching and education to promote these rights and freedoms and by progressive

measures, national and international, to secure their universal and effective recognition and observance...

This means, for example, that scientists and scientific societies have a responsibility, by virtue of their membership in the human community, to defend human rights. The integrity of science does not come about because scientists dispassionately stand apart from the concerns of the world, but rather because the scientific world is an open society whose unwritten constitution guarantees the right of any idea to be heard and tested. Without openness, science becomes dogma—unable to distinguish between wish and truth.

To champion human rights is not only correct from a moral standpoint; it is immensely practical as well. Scientists should know, and as a member of Congress I am well aware, that life involves endless change: change of scientific ideas and change of economic forces and powers. If we do not allow avenues for expression of those changes, eventually everybody loses.

This reality is cogently stated in the Preamble of the Universal Declaration:

Whereas, it is essential, if Man is not to be compelled to have recourse, as a last resort, to rebellion against tyranny and oppression, that human rights should be protected by the rule of law.

From a global perspective, with the increasing pressures of population, environmental pollution and resource shortages, only an open society can generate the creative and imaginative solutions necessary to confront the problems facing mankind. Science does have mechanisms that permit almost any idea to surface eventually. This is one of its great strengths. But if this open criticism ceases, then science

will lose its vitality just as other great social and cultural movements have throughout history. Academic freedom and the human rights that guarantee it are necessary for the survival of our scientific culture.

Congressional activities

With the awareness that foreign policy and domestic science policy are intertwined, the Committee on Science and Technology began, during the 95th and 96th Congress, to recognize the importance of human rights to science policy. I would like to highlight recent activities of the Science Committee and its members in this regard.

While most of these activities have concerned US/Soviet science exchanges, they also involve economic rights and thus affect domestic economic and technology policies. I am heartened that within our Committee there is a growing belief that human rights should affect the funding and conduct of science policy both nationally and internationally. Members such as Tom Harkin of Iowa, Harold Hollenbeck of New Jersey and Don Pease of Ohio have been leaders. They deserve credit for initiating action at a time when it was not popular to support human rights.

Beginning in June, 1978, Committee members Hollenbeck and Harkin held an informal hearing, at which Avital Shcharansky and others were witnesses, to discuss the international human rights situation of scientists, with particular attention to the Soviet Union. While there was unanimous concern over the human rights of scientists, there was strong debate over the proper role of government. Most witnesses argued that any protests should be carried out at the initiative of individual scientists. I, for one, believe

that official scientific exchanges, like trade or military aid, must occasionally be limited by government to protect human rights. The debate persists.

In 1979 human rights issues took a more substantive form in Science Committee reports on the authorization of the National Science Foundation for fiscal years 1980 and 1981. When the Committee authorizes the activities of NSF or reports out any bill, it also issues a Committee Report which details the policies contained in the legislation itself. For the past two years these reports have contained sections devoted to human rights and the funding of science. In 1979, we requested that before NSF undertook any major expansion of facilities in foreign nations, it should notify the Congress through our Committee so that members could consider whether it was appropriate for the United States to do so. We had in mind, of course, the situation in Chile.

We also requested that NSF report to us on those activities it might undertake so our Committee could be certain that these activities would enhance the human rights of scientists throughout the world. NSF has presented its report to us. While it provides a good survey of the existing activities of groups such as the National Academy and the American Association for the Advancement of Science, it only concludes that NSF should maintain a clearinghouse of human rights information for scientists going on foreign exchanges.

In 1980, after the arrest of Andrei Sakharov, the Subcommittee on Science, Research and Technology reduced NSF funding for fiscal 1981 for the USSR scientific exchanges. I might add that I believe funding should be reduced only in response to persecution of Soviet scientists or to political interference with exchanges, but not, as some have suggested, in response to geopolitical events such as those occurring in Afghanistan. For those events other responses are more appropriate. In the same report the Committee also directed that NSF give clear preference to projects that enhance or contribute to the civil and political rights of Argentinian scientists and technologists.

During the same period, I introduced House Joint Resolution 534 defining US policies with respect to scientific and technical exchange with the Soviet Union. Twenty-six members of the Science Committee cosponsored the resolution. The joint resolution mandated suspension of most official US/Soviet scientific exchange for six months; suspension was carefully limited to official exchanges. The Committee also called for clarification of Administration policy on foreign attendance at technical conferences so



Meeting of the Moscow Seminar on Collective Phenomena. These were started in 1972 to give refusenik and dissident Soviet scientists, who are largely ostracised by the Soviet scientific establishment, an opportunity to exchange scientific ideas and information and to learn about the latest scientific developments from visiting foreign colleagues. Soviet police halted the Seminar last year, but have recently allowed them to resume. Mark Azbel, chairman of the Seminar from 1974 to 1977, is shown leading a discussion before his 1977 emigration to Israel.

as to avoid a repeat of the events of the Santa Monica Conference on Bubble Memory Materials (PHYSICS TODAY, April 1980, page 81). Unfortunately, I believe, many scientists thought that Resolution 534 was an unwarranted interference of government in the affairs of science.

Additionally, in its report on NSF and in section 8 of Resolution 534, the Science Committee moved beyond the immediate issue of cutting back US/Soviet exchange by urging that individual scientists and professional organizations

Should accept primary responsibility for developing and implementing policies and standards for the conduct of international cooperative science and technology, including conferences, meetings and other communication, and for the protection of "Human rights and fundamental freedoms" of scientists, scholars and technologists.

I believe that the scientific community *should* take primary responsibility for this, because its members are most aware of the needs and concerns of scientists. Nevertheless government science agencies and general legislatures in every country must recognize their duties, not the least important of which is a responsibility to enforce the human rights of each of the different groups in society equally.

This year, the challenge is to get a new Congress to reconsider the human-rights issue. I intend to promote legislation, perhaps supported by NSF, to encourage development and implemen-

tation of public and professional-society policies that relate human rights to science. I welcome suggestions and help from the scientific and legal communities on this subject.

On a more personal level, members of my subcommittee and I have often written Soviet authorities to protest the condition of Soviet scientists such as Anatoly Shcharansky, Yuri Orlov and Sergei Kovalev. But fewer scientists and politicians have shown concern about the condition of colleagues in Latin America and elsewhere. I would appreciate receiving any information concerning the disappearance or suspected abuse of scientists in Latin America. Since there is strong evidence that many scientists have suffered badly in such nations as Argentina, Brazil, Uruguay and Chile, I plan to take action that might include introduction of a sense-of-Congress resolution containing the names of individuals who have disappeared. An important step in this regard was made at the workshop held at the recent meeting of the AAAS in Toronto. One of the workshop's recommendations was to set up a Latin America Regional Center for human rights to monitor the state of scientific and academic freedom in Latin America. I understand also that AAAS officials plan to monitor development bank loans to research and training institutions in Latin America. I share their concern that development loans may have gone to Argentina and Uruguay to replace scientific talent lost through political repression. This problem is precisely

what our Congressional delegation to the UN Conference on Science and Technology for Development warned of as one factor contributing to a "brain drain" from developing nations.

The responsibilities of scientists

Scientists, on the other hand, have responsibilities as well. They should be on the lookout for technologies that will serve human values, one of which is the right to meaningful work. It should *not* be the goal of technology simply to eliminate labor without at the same time recognizing the need to provide new, creative and self-fulfilling opportunities for men and women. For example, the California rural legal assistance program actually brought suit against the University of California for its part in the development of technologies which have thrown farm workers out of work. I would not argue that it is desirable to preserve work-perpetuating drudge jobs, but it is the responsibility of science and of our economic system to help create substitute opportunities for work when jobs are eliminated. Scientists cannot be blind to the effects of their research; they have a responsibility to influence research priorities in order to promote economic and social rights. It might be helpful to have people on peer review panels who have had experience with and have shown sensitivity to human rights issues, at least in the area of applied science and technology.

For example, the present national concern for industrial innovation and economic revitalization raises substantial human rights questions. It is a basic right that persons have some guarantee that their work and the condition of their lives will not subject them to unduly high health risks. As we undergo this innovation revival, scientists and technologists should lead in developing economic and technical methods which will control environmental pollution as well as health and safety hazards in the workplace. As we rebuild our nation's economy, we must not sacrifice human lives, health and happiness for private profit; if for no other reason, it is unnecessary to do so. Experience indicates, however, that one must *systematically* incorporate human rights considerations into corporate research and financial planning from the beginning.

In the context of new industrial and economic policies, I would like to note two specific human rights issues on which science, particularly the social sciences, needs to focus research efforts. The first is the development of new insight into economic processes so that we no longer sacrifice the right to work in the battle against inflation. There is no intrinsic reason why the goals of employment and inflation con-

trol should be contradictory, and yet economic theory cannot seem to get beyond this basic conceptual conflict. There must be an alternative; it is up to the scientific community to help us use our imagination to find a way around this impasse.

The second issue is the assessment of technological risk in public policies and regulatory decisions. Conflicts arise in complex technological decisions as we are forced to trade off benefits accrued by one segment of society in favor of risks assumed by another segment. This is especially so when the person who is asked to assume the risks does so involuntarily. While it is important for science to give insight into ways around this dilemma, we must not expect science to provide a calculus of moral choice. We should not look to risk-benefit analysis or any other technical method to abdicate responsibility for the difficult moral choices which we, both as political leaders and as moral beings, are obligated to assume. Conversely, research and development is intimately connected with the dilemmas of South African materials and minerals versus racial equality, and environmental quality and worker health and safety versus economic profit in this country. Human rights are not simply a question of science exchange with the Soviet Union; they involve all of us in the Congress and all physicists in their laboratories and in their research from day to day. If we as a nation or if science as a profession stands on the sidelines, we shall be swept aside by history much as older cultural and social institutions have been when they lost their hold on man's imagination. And what is science if not a creation of man's imagination?

That is probably the most important point I wish to make; it is the point that underlies the connection between science and human rights. It is obvious that a physicist, for example, is not directly concerned with human rights as he searches for evidence of quarks and gluons. That is as it should be, for the history of science is replete with examples of false hopes and delays caused by the attempt to impose political, ethical and moral criteria upon the facts and theories of science. But to conclude from this that science must be a bystander to human affairs is equally misconceived. As individual scientists among the community of all persons, and as one profession among the community of human activities, scientists and science have both rights and responsibilities, one of which is to promote respect for human rights throughout society.

We all have the responsibility to apply our talents and abilities to improve the condition of our fellow man and, I might add, other forms of life on

this earth. All species have the right of life and all are precious, high and low. Scientists bear a special responsibility, given their understanding and vision of the order of nature, which is the essence of science.

The rights of women and minorities

At this point, I would like to mention one human rights issue that should be of immediate concern to US scientists: namely, how to assure equal participation of all our citizens in science and technology. Women and minorities constitute fewer than 10 percent of the scientists in this country. This represents a fundamental weakness in our search for scientific and technological talent, a weakness that we have ignored for 30 years but that we can ill-afford in a time of economic and resource stress.

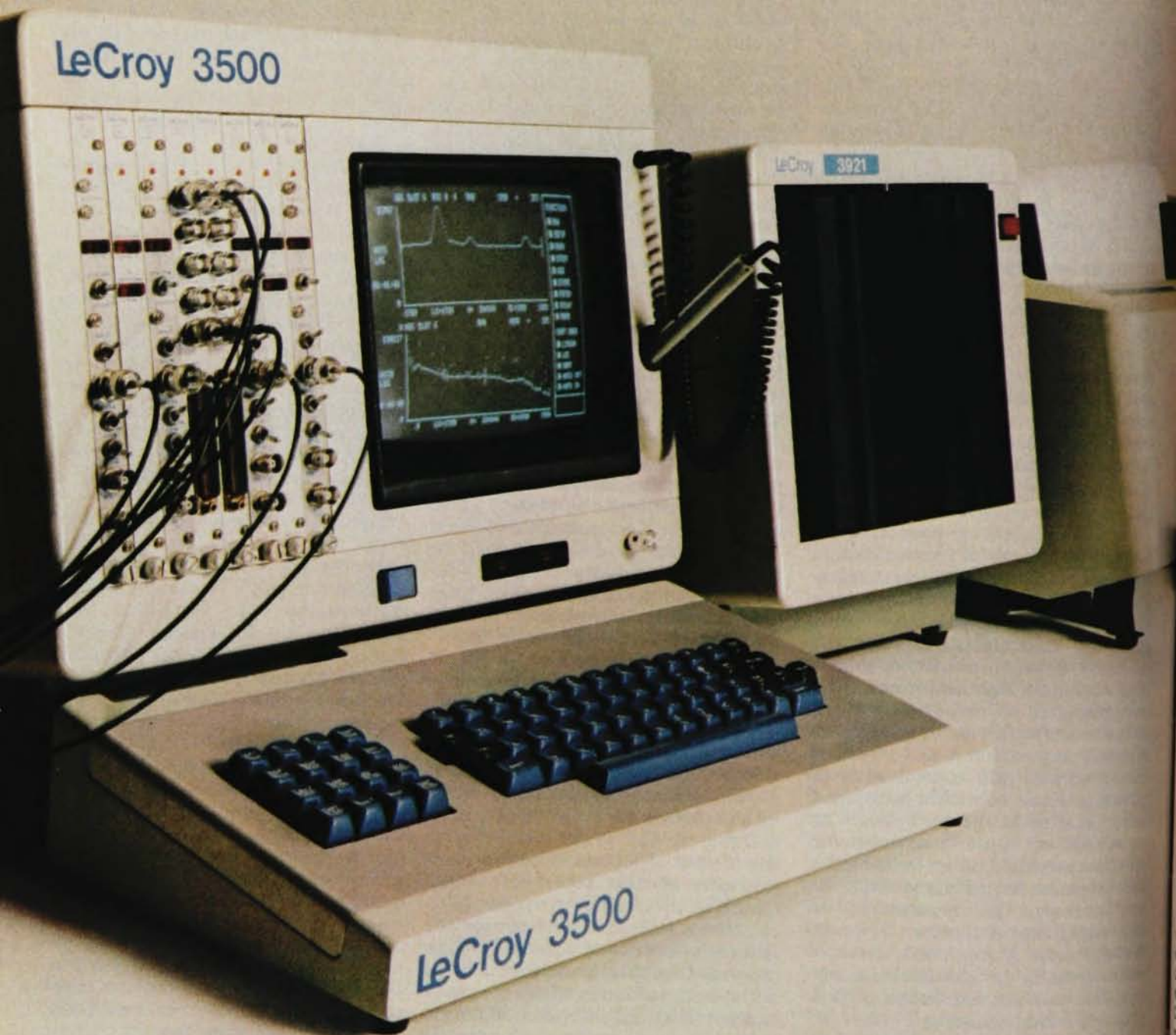
To correct the situation, Congress last year passed the Science and Technology Equal Opportunities Act, despite some doubts about how to mix its goals with the goals of basic science support. I hope the doubts will subside. In funding increased opportunities for all citizens, this move opens up competition for better ideas in science. The right of all citizens—without regard to sex, religion or race—to have an equal opportunity to participate in scientific and technological activities and to enjoy the fruits of science is surely a basic human right. It is also vital to national survival.

I am proud, therefore, that PHYSICS TODAY, as a representative of the physics community, called for enactment of Senator Kennedy's Women in Science Bill (PHYSICS TODAY, September, page 144). This support greatly aided the passage of the broader equal opportunities bill that eventually became law. The law is not a panacea, but I hope nonetheless that we can implement and improve it over time.

Under this Science and Technology Equal Opportunities Act, the President is required to send to the Congress within a year a national policy concerning the participation of women and minorities in science as well as the impact of science and technology on women and minorities. I urge the scientific community to help the Administration prepare that policy and to assist our Subcommittee in the oversight hearings of the Act to be held this year. We need your help.

Where do we go next? First, we must make certain that the sensitivity to human rights, which has been heightened over the past four years, is not lost. The Carter Administration deserves great credit for championing these ideals which are, after all, the basis of our existence as a nation. I hope the Reagan Administration will also recognize that human rights

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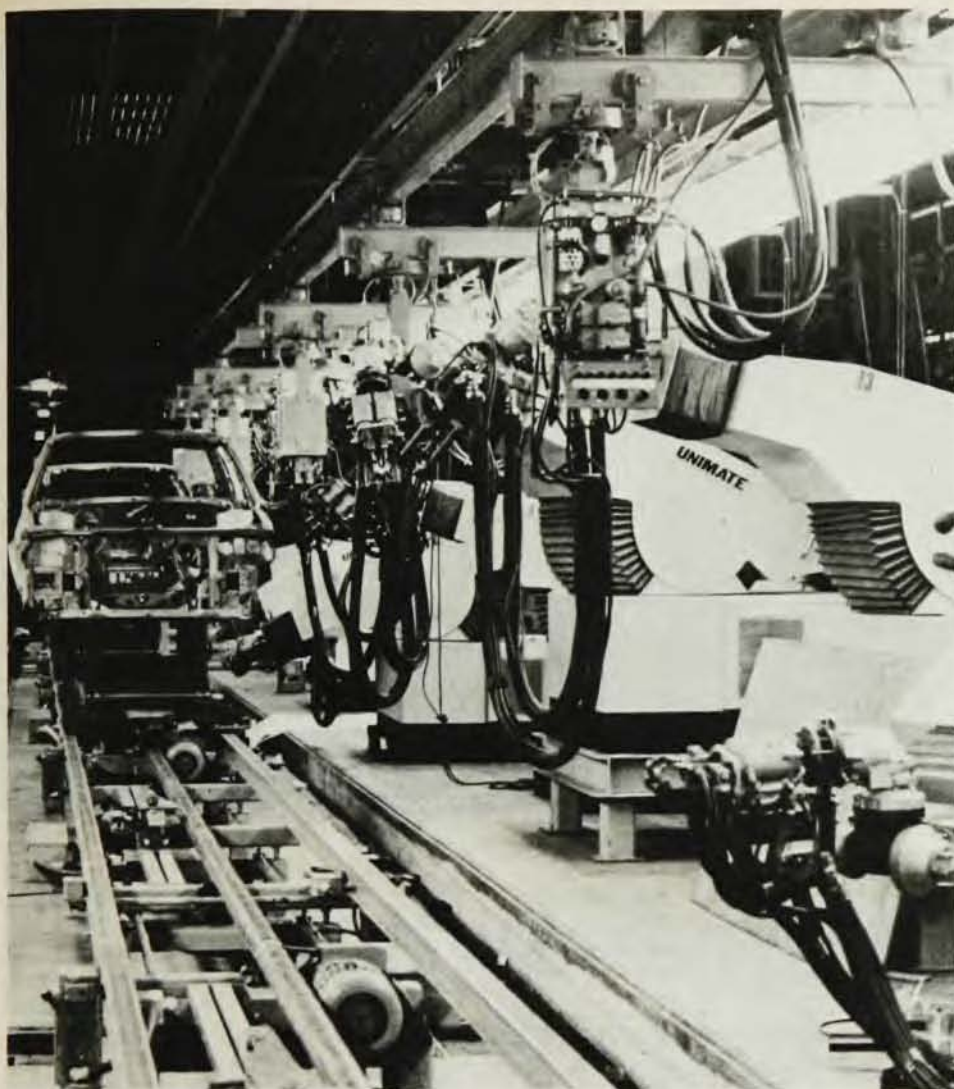
should not be subordinate to other foreign and domestic policy considerations; in the pursuit of materials and national security, we must not sacrifice human rights concerns. Materials are important for the operation of a scientific society, but we must not forget, for example, that Nigeria, our second largest source of foreign oil, has threatened to cut supplies if we do not put pressure on South Africa to moderate its racial policies. Several members of our Committee emphasized this point when we passed the National Materials and Minerals Policy Research and Development Act of 1980. Scientists can help by making this clear to those in the new Administration and those on corporate councils who believe, I think somewhat shortsightedly, that access to materials, energy and markets is inversely proportional to our insistence on human rights. Such is clearly not the case over the long run.

Second, it will be important to follow up on the suggestion made by John Ziman in his writing and by me, independently, in connection with Resolution 534. The scientific and legal communities must develop international standards and policies to protect intellectual, civil and political rights throughout the world. Perhaps, as Ziman suggested, the International Council of Scientific Unions and the International Commission of Jurists should sponsor a joint effort to define some basic principles. I am particularly pleased to learn from Herman Feshbach that the American Physical Society has already set up a committee to consider the issue of general standards and policies. I am ready to provide whatever assistance would be useful in working with that committee and ICSU's Committee on the Safeguard of the Pursuit of Science.

In these efforts, it is important to understand better the relative roles of scientists, scientific societies and government. I believe scientists cannot solve the problem of preserving the human rights of scientists on their own. Human rights codify fundamental relationships between all men and women. That is the business of both government and scientists but not of any *one* group in society. For scientists to assert, as some have, that government should not be concerned with the human rights of scientists is to ignore the role of government as the embodiment of the social contract.

What are some specific things we can do with regard to human rights? First, I hope universities will provide fellowships or employment for scientists who have been subjected to political persecution in other nations.

The scientific community should speak out against technical and military assistance to nations who are mis-



Robot welders at work on a car at a General Motors plant in Lordstown, Ohio. The machines produce more uniform welds than a human welder could, and require no human operators.

using science and technology for repressive political ends.

We should work hard for ratification of the International Covenant on Economic, Social and Cultural Rights, the International Covenant on Civil and Political Rights and the American Convention on Human Rights, all of which President Carter submitted to the Senate. Scientists and other concerned individuals should express their interest in ratification to our new UN Ambassador Kirkpatrick.

Scientists in corporate research should urge management to seek business opportunities in countries where the human rights of the citizens are respected. Here at home, while we rebuild the American economy, let us learn from past mistakes. It is far cheaper to do a good job initially than to repair the damage later. As members of the scientific community make the decisions on the design and application of new technologies, they can help assure that high standards are adhered to.

Collectively and individually, scientists must more fully address the problem of directing science and technology

to the pursuit of peace and not war. It is tragic that the driving force in the development of new technology has often been the preparation for war; it should be the opposite. At a time when human survival faces a nuclear threat, the scientific community should explore every resource it has to help political leaders use better methods of resolving conflicts and eliminate dangerous technological arms races that jeopardize the future of mankind. For this reason I am extremely disturbed by the growth of research and development funding in the Department of Defense when compared to similar funding through civilian agencies. This R & D commitment sets the stage for ever-larger defense budgets in the future and continued escalation of the arms race. The scientific community must ask whether its goals are best served by, or whether its conscience permits, this allocation of research funds to defense even if the alternative is less money for science as a whole.

It is no accident that the word "conscience (con-science)" is derived from the Latin to act "with science or knowledge," but today means the faculty of

moral or ethical rightness governing one's conduct. Until recently, knowledge was not seen as distinct from one's understanding of the right order of the world and of human conduct. Many scientists, such as Andrei Sakharov, have not lost sight of the intrinsic connection between science and the human rights which guarantee the integrity of man's unique abilities, including the quest for knowledge. These scientists have been great leaders in the struggle to protect human rights. Other scientists, however, have applied their ingenuity to develop weapons of mass destruction, techniques of torture, and technology whose immediate result is unemployment, environmental pollution and the concentration of economic power.

The dilemma for scientists, Sakharov included, is well stated by Jacob Bronowski in his *Ascent of Man*:

There is an age-old conflict between intellectual leadership and civil authority... The intellectual leadership of the twentieth century rests with scientists. And that poses a grave problem because science is also a source of power that walks close to government and that the state wants to harness. But if science allows itself to go that way, the beliefs of the twentieth century will fall to pieces in cynicism.

Knowledge is not a loose-leaf notebook of facts. Above all, it is a responsibility for the integrity of what we are, primarily of what we are as ethical creatures. That is the responsibility science bears as an intellectual force at this time in human history. The responsibility we bear, as members of the national legislature, is to protect and bring together your views as scientists with the views of others. The responsibility we all bear is to make those fundamental choices of value: Who we are, where we are and where we are going. To exercise that choice is your fundamental human right, it is also the fundamental responsibility that accompanies that right.

Commenting last summer on the defenders of human rights in the USSR Sakharov wrote:

On their side, they have moral force and the logic of historical development. I am convinced also that their activity will continue—whatever the size of the movement. What is important is not the arithmetic but the qualitative fact of breaking through the psychological barrier of silence. It is our challenge in Congress to see that recent support for human rights at home and abroad is not silenced by expediency. This goes for science and scientists as well; they cannot remain silent. They must speak or they will lose their position in the "con-science" of man. □