editorial

The peril of curbing scientific freedom

Americans have never been comfortable with secrecy. It is too apparent that oppressive governments have the most to conceal. We have prided ourselves on the openness of our society, and when even our constitutional safeguards seemed inadequate to insure that openness, we invented the Freedom of Information Act, a totally unprecedented testament to the self-confidence of a nation. And yet, all but the most extreme can see the need for governments to guard closely certain information.

Scientific secrets, however, are quite unlike other state secrets. They are held first by nature, and our opponents can learn them as we do, without breaching our security. Thus, although the government has the authority to classify and thereby restrict information bearing a particularly close relationship to national security, in the field of science it can at best maintain a fragile lead. But it is not our science that the Soviet Union most covets. Rather it is our technology, which is bound to science, as Pasteur observed, "as the fruit to the tree that bears it." In recent years the Soviets have acquired our technology at a rate that many regard as alarming. They have done this in large measure, not through the theft of classified secrets, but through the collection of *unclassified* technical information by a vast intelligence system. In an attempt to stem this flow (it has been called a "hemorrhage"), the government has taken or is contemplating measures that are seen by some as a threat to our most cherished values, and could in any case prove harmful to the very system that has given us our lead in technology.

By every indicator (even allowing for the striking performance at CERN), the US is doing exceedingly well in basic science. It should be noted, however, that more than a third of the American Nobel Laureates are naturalized citizens who were in many cases attracted to the US by the freedom of our scientific system: freedom to publish, freedom to test our ideas in personal contact with colleagues and freedom from pressure by external authorities. Indeed, such freedoms are essential to the health of science. Even in applied technology great care must be exercised in limiting the openness of communication because of the dynamism and rapid obsolescence of new technologies.

Yet, since 1980 the government has sought to block the presentation of certain unclassified papers at open scientific meetings and limit the access of foreign nationals to university laboratories engaged in some unclassified research (June, page 41; this issue, page 53). Concerned by the arbitrary, almost capricious, nature of these actions, a panel of the National Academy of Sciences conducted a study entitled "Scientific Communication and National Security" under the leadership of Dale Corson, President Emeritus of Cornell University and a physicist (February, page 42). Their thoughtful report sought to establish criteria for identifying "gray areas" of research at academic institutions, which, although inappropriate for classification, are nevertheless sensitive to the national security, and to recommend controls for the conduct and reporting of such research. Although response to the recommendations of the Corson panel was generally favorable from all sides, matters seem to have worsened in the year since it was issued:

- A presidential directive has been issued (Executive Order 12356) setting new criteria for classification that have the effect of making it easier to classify scientific research.
- A move is underway, led from within the Department of Defense, to emasculate the Freedom of Information Act.
- National Security Decision Directive 84, issued by the President in April, would require those with access to Sensitive Compartmented Information to sign a lifetime prepublication review contract. (The numbering of this directive seems symbolic in view of the Orwellian prophesy.)

Science and government, which for more than four decades have formed a highly successful partnership, view each other with increasing suspicion and impatience. History suggests that this is as unnecessary as it is unfortunate. Scientists have consistently taken the lead in voluntarily restricting information whose disclosure might prove harmful to the national interest. By contrast, government censors have shown little aptitude for distinguishing between critical technology and the basic science that spawns it (even though the Corson panel has provided an excellent set of guidelines for making this distinction).

It seems to me, however, that the key question has not yet been addressed. Why has the Soviet Union found it necessary to rely so heavily on Western technology? Science education in the Soviet Union is a source of envy to those of us concerned with the crisis in our own schools. Individually, Soviet scientists are as dedicated and creative as any in the world. The Soviet government is generous in its support of basic and applied science. And yet, experimental science in the Soviet Union is scandalously bad. Much of the explanation, I believe, lies in the fact that the Soviets have created barriers to free communication for their own scientists not unlike those that some would impose here.

Concerned about this issue, the Council of The American Physical Society has recently affirmed its support for the unfettered communication of unclassified scientific information. (See page 99.) It would be ironic, if, in the name of national security, we were to jeopardize the basis of that security. It would be tragic if our methods began to resemble those we repudiate.

ROBERT E. MARSHAK
President
The American Physical Society