Technology Transfer, Export Controls, and Scientific Freedom

"It is the policy of the United States to sustain vigorous scientific enterprise. To do so involves sustaining the ability of scientists and other scholars freely to communicate research findings, in accordance with applicable provisions of law, by means of publication, teaching, conferences, and other forms of scholarly exchange."—Declaration of Policy, from the Export Administration Act Amendments of 1985, Public Law 99-64.

Senator: "What about these documented disclosures that the Soviets are stealing us blind, that their defense build-up depends on the technology they have lifted from us and from our allies?"

Specialist: "I have examined the Soviet reports you refer to, and they are typical of bureaucratic claims of achievement that are put forward to justify a government agency's existence. Of course there is strong interest in each others' technology, but that is not dependency. The facts are that the Soviets have a high degree of defense-production independence, indeed it is seen by them as vital that they should have; so that if all Western imports, both commercial and otherwise, were suddenly cut off, it would have no significant effect on Soviet defense capabilities."

Senator: "Well, that is quite something. I won't say you're wrong, but it is certainly different from what we've been hearing."

—Colloquy from a recent session of the American Specialists on the Soviet Union, a project of the American Committee on East-West Accord.

National Security Controls and Scientific Information

by Harold C. Relyea

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Government efforts to impose limits on scientific communication arose in the late 1970s as relations between the United States and the Communist bloc became increasingly strained, with the era of detente coming to an abrupt halt in December 1979, when the U.S.S.R. invaded Afghanistan. During the final months of the Carter Administration, mounting tensions between the superpowers prompted the curtailment of various cooperative activities by the U.S. and Soviet Union, including a number of scientific and technological exchanges. Federal officials then began seeking to limit certain presentations or participants at scientific professional conferences as well as the teaching of some scientific subject matter to certain foreign students. In general, the explanations for these restrictive actions were that a particular kind of information, sensitive in a national security context, was being improperly imparted and, in order to prevent this conveyance, the Government was exercising its regulatory powers. The principal authorities relied upon in these efforts were export control laws—the Export Administration Act and its regulations, the Arms Export Control Act and its International Traffic in Arms Regulations—and government research contract prerogatives. However, security classification powers, the Atomic Energy Act, and the Invention Secrecy Act also became significant in some cases.

Efforts to regulate the communication of certain scientific information by professional societies in their publications or at their conferences began around February 1980. At that time, the Department of Commerce informed American Vacuum Society organizers of a small international meeting on magnetic bubble memory devices that the presence of certain foreign nationals at the conference subjected the scheduled proceedings to compliance with export licensing requirements. In order to avoid possible fines or imprisonment for failure to comply with export regulations, the sponsors of the gathering rescinded invitations that had been sent to attendees coming from Hungary, Poland, and the Soviet Union. Scientists from the People's Republic of China, who were already en route, were permitted to attend the meeting after signing an agreement not to "re-export" what they learned to any nationals from 18 named countries.

In April 1984, the American Association for the Advancement of Science released a compilation documenting this and a dozen other such incidents involving professional societies. In one case—the Twenty-Sixth Annual International Technical Symposium of the Society of Photo-Optical Instrumentation Engineers—more than 100 technical papers scheduled for presentation were withdrawn at Government insistence. Individuals attending the May 1984, Twenty-Fifth Structures, Structural Dynamics and Materials Conference found that two of its sessions were closed to foreigners. The conference program, citing the necessity of complying with a section of the International Traffic in Arms Regulations, advised participants of the need to have documented proof of citizenship: "If you fail to carry this citizenship material with you," American participants were told, "you will be denied admission to these sessions." This self-censorship occurred even though one of the conference sponsors, the American Institute of Aeronautics and Astronautics, has a policy of holding open, public meetings if at all possible. Reporting on the incident, *Defense Week* (May 7, 1984), a privately produced newsletter, commented: "Never before have organizers volunteered to close a meeting unless it was jointly sponsored by the federal government." Perhaps in this case, Government intervention was anticipated.

At the same time, the academic community also began to experience the effects of the Government's new national security concerns about the open communication of scientific research. In early 1981, the Department of State informed Cornell University that a Hungarian engineer, scheduled to visit the campus to study electronics, would have to be limited to classroom pursuits, could not participate in any private seminars or groups, and would be prohibited from receiving prepublication copies of research papers. In view of these conditions, the visit was cancelled. This incident proved to be among the first of many visa-conditioning controversies.

In the autumn of 1981, the Department of State began asking academic officials at various major universities to cooperate in prohibiting visiting students from the People's Republic of China from engaging in research and studies in certain scientific and technological areas that the Department regarded as being subject to export restrictions. Many campus administrators declined to engage in such policing actions. The president of the University of Minnesota, C. Peter Magrath, for example, responded in a letter which, in part, said: "Our mission is teaching, research and public service, and neither our faculty nor our administrators were hired to implement government security actions." Nonetheless, while many academics regarded such a stand as commendable, the UCLA Extension Program scheduled a short course (2-5 days) on "Metal Matrix Composites" in June of 1984 that was available to "U.S. Citizens Only." Co-sponsored by UCLA and the Metal Matrix Composite Information Analysis Center, a subsidiary of the Defense Department, it was to be held in an open, on-campus conference facility.

Initially, such attempts to impose secrecy on or to restrict the communication of scientific information were based upon statutes and administrative regulations currently in force. Later, some additional authority was created. In every case, however, application has had a common basis—protection of the "national security." This policy concept, of course, is subject to a variety of interpretations or understandings. As long ago as 1949, Sidney W. Souers, then executive secretary of the National Security Council, described it in the pages of the *American Political Science Review* as "a point of view" rather than a distinct area of governmental responsibility.

Undoubtedly, there is a general consensus among scientists and Federal officials that the Nation's security should be protected. Disagreement arises over how such protection is to be realized. To many scientists, national security results from achievement in science, not from concealment. And, they point out, "science" and "national security" are not antagonistic to one another. In the past, scientists and government leaders have demonstrated a broad appreciation of the national security concept, including more than just military considerations. In terms of the current controversy, national security, in its most meaningful context, is not defined by Soviet military capability alone.

American scientists are willing to concede that some unwanted transfers of scientific knowledge to the Communist bloc have occurred. Their objections to increased Government controls on scientific communication, moreover, should not imply that they underestimate the external dangers facing the United States, are unmindful of the need for limited official secrecy or national security safeguards, or are unaware of the potential military applications of their research and discoveries. In taking issue with new national security limits on scientific communication, American scientists appear to be neither politically naive about nor unappreciative of the position of their country in the continuously tense international arena. They are disturbed about the effects of such restriction on the scientific process. Ideally, in their opinion, all scientific findings, conclusions, and interpretations should be publicly and generally available, open to criticism as well as improvement, and, if necessary, rejection. This is how science, traditionally, has been conducted and has advanced. Not the least of the scientists' worries, however, is the pragmatic effect of new national security restrictions on scientific communication. The strength and safety of the nation, they argue, will not necessarily be maintained or improved if scientific and technological progress and innovation are inhibited as a result of limitations on the dissemination of scientific information.

Government leaders supporting increased national security controls on scientific communication certainly are not eager to impede scientific and technological advancement and achievement in the Nation. And officials in the Commerce, Defense, and State departments have indicated differing points of view about this policy. Some urge more stringent enforcement of existing laws while others believe this strategy alone is inadequate and advocate the creation of new, stronger control authority. Other factors modifying their thinking are differing understandings of the national security concept, foreign policy and international trade considerations, academic freedom and First Amendment implications, and some practical enforcement problems.

Secrecy agreements have been utilized for some time within the Federal intelligence community and, in 1980, were found (*Snepp* v. *United States*, 444 U.S. 507) by the Supreme Court to be a proper enforcement device to prevent unauthorized disclosure of classified information. N.S.D.D. 84 extended the use of such contracts to all executive branch personnel having access to classified materials. The Director of the Information Security Oversight Office has confirmed that, where deemed appropriate by officials, the requirements of N.S.D.D. 84 can also be applied to government contractors. In the fall of 1983, Congress temporarily prohibited the implementation of the directive's polygraph examination provision and similarly limited the scope of the S.C.I. agreement (see 97 Sta. 690-691, 1061). The Reagan Administration subsequently agreed not to pursue these points before the end of 1984. All other provisions of N.S.D.D. 84 are being implemented.

By the second year of the Reagan Administration, discussion and debate of the need for increased national security controls on scientific communication, attempts by the Government to exercise authority in this regard, and proposals for new policy toward this end got underway in a number of forums. The National Academy of Sciences formed a special panel to explore these matters in February 1982, and a report of findings and recommendations was released on September 30 of that year. The panel, chaired by Dale R. Corson, president emeritus of Cornell University, was given full support by the Department of Defense and the Federal intelligence community. It conceded in its report that there had been "a substantial transfer of U.S. technology—much of it directly relevant to military systems—to the Soviet Union from diverse sources," but found "that universities and open scientific communication have been the source of very little of this technology transfer problem."

On Capitol Hill, there were several significant explorations of the issues concerning increased national security controls on scientific communication. In May 1982, hearings by the Senate Permanent Subcommittee on Investigations on technology transfer, resulted in an important report (S.Rept. 97-664) in November of that year. There was also a March 1982 hearing on the impact of national security considerations on science and technology by two