

Classifying Science:

A Government Proposal . . .

Adm. Bobby R. Inman, USN, Deputy Director
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. . . There is an overlap between technical information and national security, which inevitably produces tension. This tension results from the scientist's desire for unconstrained research and publication, on the one hand, and the federal government's need to protect certain information from potential foreign adversaries who might use that information against this nation. Both are powerful forces, thus it should not be a surprise that finding a workable and just balance between them is quite difficult. But finding this balance is essential, for we must simultaneously protect the nation and protect the individual rights of scientists—both as academicians and citizens.

This tension is accentuated when scientists are employed by the federal government directly, or work for the government indirectly in their own offices with federal research funds. Some of this work is done on subjects that directly affect the nation's security—e.g., its defense, diplomacy and intelligence efforts.

There are cases where interplay has occurred between science and the national security interests. One of the most obvious, of course, is the Manhattan Project of World War 2 in which the first nuclear weapons were created and tested. Another is the development of "national technical means" to monitor foreign compliance with international arms control accords.

Science and national security have a symbiotic relationship—each benefitting from the interests, concerns and contributions of the other. In light of the long history of that relationship, the suggestion is hollow that science might (or should somehow) be kept apart from national security concerns, or that national security concerns should not have an impact on "scientific freedom."

The need in today's world for protection of some information, for secrecy is clear—I believe—to any fair observer. Protection of the information necessary to safeguard our society, and to conduct our international affairs, must occur. Within the federal government, there is a system established by Executive Order to assess the expected damage, should certain information come into the hands of foreign enemies, and—based on that assessment—to control access to that information so as to prevent any such exposure. This exposure potentially could occur through public release of the data, or from the successful clandestine activities of the agents of foreign intelligence services.

And we should make no mistake, foreign intelligence services—among other entities of foreign governments—are collecting all types of information in the U. S. Specific data on technical subjects are high on the wanted list of every major foreign intelligence service and for good reason.

The U. S. is a leader in many—if not most—technical areas, and technical data can enhance a nation's international strength. In terms of harm to the national interest, it makes little difference whether the data are copied from technical journals in a library or given away by a member of our society to an agent of a foreign power.

A different source of tension arises when scientists, completely separate from the federal government, conduct research in areas where the federal government has an obvious and preeminent role for society as a whole. One example is the design of advanced weapons, especially nuclear ones. Another is cryptography. While nuclear weapons and cryptography are heavily dependent on theoretical mathematics, there is no public business market for nuclear weapons. Such a market, however, does exist for cryptographic concepts and gear to protect certain types of business communications.

Research into cryptography is an area of special, long-standing concern to me. When I was director of the National Security Agency, I started a dialogue to find a common ground regarding cryptography between scientific freedom and national security. Considerable effort has gone into that dialogue, by both scientists and public servants, and I think the results so far have been reasonable and fair. Cryptologic research in the business and academic arenas, no matter how useful, remains redundant to the necessary efforts of the federal government to protect its own communications. I still am concerned that indiscriminate publication of the results of that research will come to the attention of foreign governments and entities and, thereby, could cause irreversible and unnecessary harm to U. S. national security interests.

There are, in addition, other fields where publication of certain technical information could affect the national security in a harmful way. Examples include computer hardware and software, other electronic gear and techniques, lasers, crop projections and manufacturing procedures.

I think it should also be pointed out that scientists' blanket claims of scientific freedom are somewhat disingenuous in light of the arrangements that academicians routinely make with private, corporate sources of funding. For example, academicians do not seem to have any serious difficulty with restrictions on publications that arise from a corporate concern for trade secret protection. The strong, negative reaction from some scientists, over the issue of protecting certain technical information for national security reasons, seems to be based largely on the fact that the federal government, rather than a corporation, is the source of the restriction. Yet this would presume that the corporate, commercial interests somehow rise to a higher level than do national security concerns. I could not disagree more strongly.

Scientists and engineers have served our society spectacularly in peace and war. Key features of science—unfettered research, and the publication of the results for validation by others and for use by all mankind—are essential to the growth and development of science. Both our national security and our economic development rely heavily on these features. Restrictions on science and technology should only be considered for the most serious of reasons.

But nowhere in the scientific ethos is there any requirement that restrictions cannot or should not, when necessary, be placed on science. Scientists do not immunize themselves from social responsibility simply because they are engaged in a scientific pursuit. Society has recognized over time that certain kinds of scientific inquiry can endanger society as a whole and has applied either directly, or through scientific/ethical constraints, restrictions on the kind and amount of research that can be done in those areas.

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One sometimes hears the view that publication should not be restrained because "the government has not made its case," almost always referring to the absence of specific detail for public consumption. This reasoning is circular and unreasonable. It stems from a basic attitude that the government and its public servants cannot be trusted. Specific details about why information must be protected are more often than not even more sensitive than the basic technical information itself. Publishing examples, reasons and associated details would certainly damage the nation's interests. Public review and discussion of classified information which supports decisions is not feasible or workable.

In contrast, it is a fact that in today's world congressional reviews of sensitive Executive Branch decisions are feasible and workable. The existence and the processes of such reviews are intentional. I do not think it is harmful to recognize that the federal government—particularly its intelligence agencies—have in fact made mistakes in the past on occasion, and suspicion of the actions of the federal government in this regard is understandable if not always supportable.

The dominant fact of this new decade is that there now exists in the Congress a forum where assertions by the government of secrecy needs can and have been challenged and examined in a properly secure environment.

I recognize that there is concern in some circles that the suspension of publication of some information, for national security reasons, means that such information will never be published. The fact is, however, that national security concerns to protect information will not—and do not—last forever. The federal government's structure and procedures, though conservative and imperfect, do work. Sensitive information does get released in due course.

The Executive Order I mentioned earlier, which requires protection of information through classification, also requires the eventual declassification of that same information. For example, voluminous classified data from World War 2 have been declassified and released—including intelligence materials that had extraordinary sensitivity when they were acquired. Much of the stimulating effort for computer science in this country came from government-sponsored and controlled classified activity.

There is in our society a legitimate need and desire which I accept that history, whether political or scientific, will be served eventually—even if national security requires that public disclosure, and personal recognition, have to be postponed.

Rather than a confrontation between national security and science, I believe that a wiser course is possible and that our joint search for that course ought to be one of our goals. A potential balance between national security and science may lie in an agreement to include in the peer review process (prior to the start of research and prior to publication) the question of potential harm to the nation. The details of such a system would have to be resolved, of course, but cooperation will be better for all of us than confrontation.

Included in such a system should be goals to simultaneously preclude harm to U.S. national security and to impose no unreasonable restrictions on scientific research, publication or the use of the results. And when restrictions are judged necessary, speedy procedures for appeals, review and appropriate compensation should be included.

One example of this type of process is that recommended in the Public Cryptography Study Group. It is not easy to create workable and just solutions that will simultaneously satisfy the wide-ranging needs of national security and science, but I believe it is necessary before significant harm does occur which could well prompt the federal government to overreact. □

... And a Scientist's Objection

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Adm. Bobby Inman, whose public service credentials are second to none, has tossed a hot potato at the American scientific community and by doing so has opened a breach between scientists and the national security establishment that will be difficult to repair.

He has asked that research scientists submit voluntarily to open-ended censorship by the CIA or face the likelihood of being forced to do so by Congress. Even in wartime such a demand would be an extreme one, and in the absence of a national security emergency it is incongruous. It raises troubling questions involving both scientific freedom and the force of constitutional protections against arbitrary government.

Adm. Inman's job as deputy director of the Central Intelligence Agency is to conduct intelligence and counter-intelligence activities within the bounds of statutory and constitutional law. CIA's adversaries presumably are the Soviets, their mercenaries and assorted terrorist groups out to create trouble.

To be sure, it is within the agency's brief to worry about unfriendly penetration and shoplifting of scientific and technological assets. On the other side of the street, the

KGB is no less anxious to conceal Soviet progress. In both situations, the incentives run to overprotection and hyper-anxiety.

Unrestricted censorship is a draconian measure that can be justified legally and morally only in extremity. It is the first refuge of frightened or authoritarian regimes, of which the Soviet and current Polish ruling powers furnish ready examples. It is an explicit interdiction of civil and human rights, and in a constitutional society its acceptability is challengeable in the absence of a clear and present danger.

The contrast between the Soviet and American environments for scientific research is sharp and unmistakable. Scientific work in the USSR operates within a strict reward-and-punishment system administered by agencies of the state. American scientists, while shuddering at the constraints imposed on their Soviet counterparts, nevertheless acknowledge that the quality of Soviet science in some instances is high.

But it is evident that the controls and oversight that are applied in the Soviet Union discourage the creativity and spontaneity that produce great science, hence the notable absence of Soviet scientists when Nobel honors are handed out.

Censorship, secrecy and the heavy presence of the police state all contribute to limiting Soviet science to something less than world class productivity.

It comes as no surprise that Soviet science is imitative and predatory, nor that it must play continually at follower-ship. If the Soviets were less passionately interested in what we are doing it would be time to start worrying about the quality of our own research.

If the objective were to reduce American scientific research to parity with the Soviet variety, censorship would be a fine prescription. But an anxiety neurosis accompanied by secrecy and censorship will not assure U.S. superiority in science or in technology.

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As best, secrecy regards the rate at which knowledge spreads. It does not seal it off permanently. American scientists are very good because security agencies do not tail them or blue-pencil their scientific papers and journals. They are good, too, because the First Amendment assures them of the right to publish and exchange ideas in the open literature and in symposia. American science is good because it can be challenged universally, tested and verified or shown to be mistaken. Finally, it is good because it thrives on competition that is at times ferocious, and it is the competition that produces winners.

Adm. Inman plainly wants American science to show its heels to our adversaries. At the same time, according to press accounts, he proposes that U. S. scientists submit their work "prior to the start of research and prior to publication" to intelligence agencies that can censor research they consider potentially relevant to national security.

As stated, without limit or qualification, this could cover the whole spectrum of the scientific disciplines and all scientists in both academia and industry. Censorship on this scale has no precedent in peacetime, and it conjures the ultimate nightmare of thousands of scientists, outstanding and mediocre, queuing before a court of summary justice whose competence to understand and assess science is unimpressive.

The likelihood is that the CIA's functionaries would search proposals for "key words and, finding them, would issue a secrecy order on that basis alone. The smothering effects on both academic and industrial science are only too evident, and it is difficult to see how our own national security interests would be well served.

Imposing secrecy or censorship discipline on scientific research, if it must be done at all, should be a last-resort decision and limited strictly to open-and-shut categories of research. Such an exception has been with us for 35 years in the case of weapons-related basic fission and fusion research, which is treated under the Atomic Energy Act as "born classified." While it has not stopped other countries, friendly and unfriendly, from discovering how to make nuclear weapons, it has served our own security purposes reasonably well.

If there is a case for defining cryptology research as a new candidate for the "born classified" treatment, the case should be presented and argued before Congress on its merits. But it is not reasonable to attempt to throw a vast security net over the spectrum of basic and applied research in an indiscriminating effort to embargo the circulation of knowledge.

Something is very wrong in the CIA's comprehension of how science progresses. It is seldom a point-to-point process, and rarely predictable. In a very true sense science is a search and discovery process. Luck and inspiration, helped along by fortuitous accident and surprise, count for almost as much as the rigor of the scientific method. Besides, knowledge breeds promiscuously. It is the clue of one scientist, caroming off the thinking and clues of another, that fashions a new piece to fit into the puzzle of information. Without this open circulation of thought, without this colliding of ideas and what-ifs, science would spin its wheels.

A subordinate but not insignificant worry raised by the CIA's proposal is the possibility that once the agency is given the information it seeks, that information may be handed off to unknown parties without the knowledge or consent of the scientists or their industrial employers, thus compromising both their professional and economic rights. After all, if the information is deemed to be of national security value, logic dictates that it belongs in the national security domain.

Scientists will not deny that our published scientific literature, being part of the essential life force of the research enterprise, can be a prize vehicle for reinforcing Soviet science. But it does not follow that all our sensitive breakthroughs are advertised zealously. American scientists who work at the leading edges of theoretical or applied mathematics, physics or microbiology are certainly bright enough to know when their ideas touch upon national security interests, and they are better equipped than CIA functionaries to make those judgments.

No responsible scientist needs to lean on a security agent to know when to keep his mouth shut, and this is especially true of applied researchers in the high-technology industries which trouble Adm. Inman the most.

The question is how one perceives the degree of security risk that goes with publishing or reporting unclassified research. To judge by Adm. Inman's remarks, the CIA considers the risk to be high. The scientific community disagrees strongly, believing that the greater risk is the ultimate high cost to national security and scientific growth of suppressing the circulation of knowledge.

Scientists hold fast to belief in the superiority of "security by achievement" over "security by concealment" in any contest with our adversaries. They will not easily accept the shame of prostrating their minds and their work at the doors of the intelligence community.

Whatever may be the case for front-door classification of certain areas of research, and for denying our adversaries access to high technology that has reached the stage of final design, the rationales do not extend to censoring scientific research at its points of origin. To impose such censorship is to lay a crushing burden on science and to import into our practices the discredited methods of our adversary. □