Europeans Protest U.S. Export Controls

They warn that American participation in joint research projects could be affected and that Europe and Japan may be driven closer together

Paris. Fears are growing in Europe that efforts by the Reagan Administration to restrict the access of foreign scientists to strategic areas of American research in the name of national security may undermine efforts to increase international collaboration in scientific activities and ultimately drive a wedge between the technological activities of the United States and its allies.

So far, the practical impact of these controls on European scientists has been relatively limited. Public criticism of the Administration's use of export control regulations has focused primarily on efforts to regulate trade in European products containing American components. When particular problems have generated wide publicity, these have usually been successfully negotiated by governments on the two sides of the Atlantic.

However, there is a growing awareness that, as the scope of the controls is gradually broadened to cover, for example, scientific results in fields ranging from space research to biotechnology, they are likely to have an increasing impact on precisely those areas in which international collaboration is felt to be most necessary and desirable. The implications are already being studied by bodies ranging from Britain's Royal Society to the scientific committee of the North Atlantic Treaty Organization (NATO) in Brussels.

Many officials are reluctant to express excessive public criticism of the Reagan Administration's actions. They fear that a hostile response might encourage the U.S. government to take an even tougher position in its effort to secure international agreement on measures designed to limit access by Eastern Bloc countries to Western advanced technology.

Some, however, are outspoken in their opinions. "Damn it all, we are their allies," says Brian Oakley, director of the Alvey Directorate, which was set up last year by the British government to support collaborative long-term research projects between the government, universities, and British-based computer companies into advanced information technology.

According to Oakley, even the climate of uncertainty and suspicion currently surrounding the potential scope of controls on the exchange of scientific information is having a chilling effect on moves to mount joint research projects between British and American computer scientists. "In the long run, this trend could become absolutely disastrous," he says.

The British computer company International Computers Limited (ICL) has already complained that it has been required to apply for export licenses on the knowledge contained in the heads of American research workers that it has recruited to work in Britain. Other companies say that they have been discouraged from opening subsidiaries in California's Silicon Valley and elsewhere in the United States because of uncertainty over whether they would be allowed to transmit research results back to Europe.

> "Some of the actions taken so far are deleterious to international science," says an official of the Royal Society.

Disagreement between the United States and its European allies over efforts to restrict access by Eastern Bloc countries to advanced technology first surfaced 2 years ago when the Reagan Administration tried to prevent European firms from selling machinery to the Soviet Union to build a pipeline to supply Europe with Siberian gas.

At the time, the United States backed down after several European countries had strongly complained that the embargo represented an unacceptable use of trade for political purposes. Now, however, the situation is different. Virtually all European countries agree with the *principle* that some form of control is needed over access to knowledge that could be used by the Soviet Union to boost its military strength; the disagreement comes over the form in which these controls should be applied. Norman Tebbit, for example, Britain's Minister for Trade and Industry, made it clear in a speech last month, shortly after returning from talks with U.S. trade representative William Brock in Washington, D.C., that he shared the American concern about protecting valuable technology. "There is good reason for this," Tebbit told the North American section of the London Chamber of Commerce. "We are 3000 miles nearer the tanks; our concern for the strong Western alliance is at least as keen as the concern of those in Washington."

Tebbit's words have been backed by several recent actions by the British government to tighten the implementation of its own controls, exercised through existing legislation such as the Official Secrets Act and the patent laws. Thus, in February it invoked national security considerations to seize a device designed to prevent the illegal copying of computer programs, which had been developed by a small computer company based in the north of England.

Tebbitt made it clear in his address, however, that while he accepted the need for controls in principle, there was still considerable disagreement with the United States on how these could be strengthened and made more effective.

"The way of achieving this is through greater realism, rather than extending their theoretical coverage," said Tebbit. "I hope misinformed critics who sometimes suggest that we in Europe are going soft on the control of strategically important technology will recognize that what we want is greater effectiveness, through selecting the things that matter."

Tebbit's remarks directly reflected growing criticism by several European manufacturers of advanced technology products containing American components—which includes virtually all European computers, as well as a wide range of instrumentation and control equipment—that their competitors have been able to use the export control regulations to their advantage in attacking foreign markets, if only through their more detailed knowledge of U.S. licensing procedures.

Perhaps the strongest comment has come in an internal report prepared by ICL, which was leaked to the British press shortly before Tebbit's trip to

Foreign Studies Policy Urged

A new survey of foreign language and area studies in the United States has concluded that nothing short of a "transformation of language teaching in America" is required to achieve desirable levels of foreign area expertise.

"*Beyond Growth: The Next Stage in Language and Area Studies*," which was funded by the Department of Defense at the behest of Congress, is the most comprehensive report of its kind in 15 years. Basically, it notes that the period of rapid and undisciplined growth in area studies has come to an end, and that the "laissez-faire" approach will not produce a balanced supply of experts.

Study director Richard D. Lambert of the University of Pennsylvania said at a press briefing that while some areas of the world—such as China, Japan, Latin America, and Western Europe—are enjoying abundant scholarly attention, coverage is very skimpy for Africa, South Asia, Southeast Asia, the Middle East, the Soviet Union, and Eastern Europe.

The fundamental problem has been that language and area studies suffer from lack of a coherent long-term policy, and funding has been tenuous and unpredictable since foundations fell away as mainstays of support in the late 1960's. Universities have been going back to basics at the expense of "scarce" languages. Resources have followed the whims of academic fashion (Southeast Asia is now "out," China is "in"). Students are discouraged from area studies because of the paucity of jobs—particularly in academia—and the inordinate length of time it takes to become proficient in a difficult language.

There is disciplinary as well as regional imbalance. Language expertise is disproportionately found among students of the humanities, while in the social sciences even area studies students tend to focus primarily on the disciplines—which, says Lambert, have become increasingly "theoretical, empirical, and American." He says it will be even more difficult to develop foreign area expertise among scientists since mission-oriented agencies are not set up to promote such specialized competencies.

The 400-page report abounds with suggestions aimed at getting maximum benefits with minimal increases in funding. For example, it suggests that certain institutions be supported in creating "segments" or critical masses of scholars in more exotic areas, leading to geographical concentration of certain specialties rather than allowing them to struggle and often wither in isolation.

With regard to language training, the report calls for new "pedagogical institutes" to do research and train teachers; for earmarking money to preserve teaching of "endangered languages;" for expansion of intensive language training facilities; and for the development of an objective way to measure a person's language proficiency.

The study group found a crying need for a federal-level body to set policy and ensure stable funding for area studies, but withheld judgment on whether this should entail setting up a new organization.

Lambert says the Department of Defense has responded "enthusiastically" to the survey and that action is being taken to coordinate military language-teaching activities along suggested lines.

Congress has yet to receive the report from the department, but concern about area studies has been growing in the legislature since the 1979 publication of the President's Commission on Foreign Language and International Studies.

In February, the House passed a bill (H.R. 2708) authorizing $150 million over 3 years for elementary and secondary school foreign language instruction. And Representative Paul Simon (D–Ill.), chairman of the House subcommittee on postsecondary education, has big plans for Title VI of the Higher Education Act, which is the major federal source of area studies funds. He has introduced a 5-year authorization bill which, starting in fiscal year 1986, would almost triple the current annual expenditure of about $33 million. Among other things, it would establish a center for international education within the Department of Education.—**CONSTANCE HOLDEN**

Washington. The report accused the United States of practicing "growing technological imperialism." It added that "the U.S. appears intent on controlling trade in high technology, either directly or indirectly, and recognizes that control of information technology in particular means power over others."

Richard Perle, assistant secretary of defense for international security, dismissed the ICL report in a recent interview with the British Broadcasting Corporation as "sour grapes." Perle said that "frankly it's the sort of remark I'd expect from a company which has lost its position at the forefront of the new technology."

Nevertheless, the charges have generated sufficient support to be taken increasingly seriously in political circles. Furthermore, several American-based computer companies, perhaps aware of the danger of reprisals from European governments, have also expressed their opposition to the Reagan Administration's plans for extending the scope of the Export Administration Act. IBM Europe, for example, has been among the most prominent in complaining that the controls could seriously affect its overseas business.

Oakley warned of even more serious consequences. He points out that, if European research workers are not allowed access to the most up-to-date American research in fields such as very large scale integrated circuits or computer-aided design, the only option will be to develop their own alternative systems, perhaps based on incompatible technical parameters.

"Our communities could drift apart because they could no longer buy each other's products," he says. "Indeed, by encouraging European countries to seek other partners, particularly, Japan, the U.S. could find itself facing an anti-American alliance."

One body which has been looking at the implications of current trends is the scientific committee of NATO. The committee, whose members are scientists appointed by governments in a personal capacity, takes pains to stress that its principal responsibility is to strengthen links between members of the NATO alliance by encouraging greater scientific collaboration, rather than servicing their military needs—a distinction which could itself become increasingly difficult to maintain.

Last October, the scientific committee devoted a special meeting to the problems raised by the growing imposition of controls on scientific information in the name of national security. A brief report

on the meeting, published by NATO last month, described the difficulties created by a "gray zone" on the boundary of military and nonmilitary research, and pointed out that the expansion of the gray zone was "raising certain questions about the ancestral traditions of freedom of expression and scientific exchange in the heart of the academic world."

The committee is not expected to make any judgments on the current situation. However, according to NATO's deputy assistant secretary general for scientific affairs, John Walker, it will discuss at a meeting in Washington at the end of May whether to publish a full account of its debate. This will include, in particular, a list of the type of questions it feels governments should consider before imposing or tightening any controls over the dissemination of scientific information.

Another body keeping a close eye on current developments in Washington is the Royal Society in London, alerted by various restrictions encountered by British scientists either attending conferences in the United States or visiting the laboratories of American colleagues. "We are keeping a careful watching brief on this whole area, since we believe that if the controls are extended much further than they are at present, it could create substantial damage to fundamental science, as well as to the relationship between British and American scientists," says a senior official of the Society who recently visited Washington for discussions with the staff of the National Academy of Sciences. "Indeed, one cannot deny that some of the actions taken so far are deleterious to international science."

For the time being, however, the Royal Society is, like its counterparts in other European countries, adopting a relatively low profile in what it sees as primarily a domestic debate in the United States. It is supporting the activities of the U.S. Academy rather than taking more direct action, such as registering a protest with the American government. Trade and Industry minister Tebbit is said to have raised the issue of access to scientific conferences in his discussion with Brock and other U.S. officials, but without achieving any significant shift in their position.

One person who is apparently convinced that things are going to get worse before they get better is Étienne Davignon, the EEC's commissioner for industry and the guiding light for its recently announced $1.3-billion research program in information technology, ESPRIT (*Science*, 16 March, p. 1159).

Speaking recently at a conference in Belgium, Davignon warned that Europe was "going into a major fight with the U.S." over controls on the international transfer of high-technology products "which will make chicken feed of our agriculture dispute" and could seriously affect cooperative arrangements at all levels between American and European companies.

Not everyone in Europe is as gloomy as Davignon. Many appear to accept growing controls on scientific knowledge as a new fact of life to which Europe's scientific institutions will, like their American counterparts, have to learn to adapt. Others, perhaps naïvely, are convinced that the United States will soften its position as soon as it realizes that its actions are as damaging as its own scientific and technological activities as to those of other nations.—**DAVID DICKSON**

Reduce Fraud in Seven Easy Steps

John R. Darsee's apparently prolific data fabrication at Emory University and Harvard continues to spawn reports and investigations. The latest is an inquiry by the National Institutes of Health (NIH) into Darsee's use of the NIH-funded General Clinical Research Center at Emory, where he was in training between 1974 and 1979. It found that Darsee's research activities "had not been adequately supervised by senior faculty," and recommended seven steps that should be taken to guard against similar occurrences in the 75 clinical centers NIH supports around the country.

NIH decided to look into the institutional processes at Emory after the university itself had conducted an internal investigation that found Darsee had apparently falsified data in some eight papers and 43 abstracts coauthored with prominent Emory faculty members (*Science*, 27 May 1983, p. 936). The Emory investigation in turn followed revelations that Darsee had fabricated data in experiments at Harvard, where he was a fellow in Eugene Braunwald's cardiology laboratory at Brigham and Women's Hospital between 1979 and 1981. Until then, nobody suspected there was anything wrong with Darsee's work at Emory.

The NIH inquiry, which was conducted by a three-member panel of consultants chaired by Evelyn V. Hess of the University of Cincinnati, found a pattern of lax supervision of Darsee's research, including the preparation of manuscripts. Darsee "appears to have conveyed the impression to the faculty that he was working closely with other [faculty members] when in fact he was operating independently," the panel says.

The panel found that Darsee's coauthors did not always review the raw data. In some cases their names were added to publications without their knowledge or consent. The failure to detect problems, "along with a lack of proper supervision, were compounded by the fact that several of the Darsee papers covering work [at Emory] were submitted for publication only after Dr. Darsee had moved to Harvard," the report says.

The panel noted that Emory has taken steps to tighten up its procedures, and the report thus does not prescribe actions specifically for Emory. Instead, it lists seven recommendations for adoption at all NIH-supported clinical research centers:

- Each trainee at a center should have a clearly designated sponsor, and the center's program director should be responsible for ensuring that this is the case.
- Publications and abstracts acknowledging the center should be approved in writing by all coauthors.
- Patient admission forms should be accompanied by a checklist to verify that clinical studies have been approved by relevant committees.
- Clinical studies performed by young investigators should be reviewed at regular intervals by the supervising physician, including raw data.
- The trainee should be encouraged to present findings at review sessions and seminars.
- Regular rounds should be conducted on a daily basis on all patients.
- Data for a given study should be retrievable 5 years after the work is completed.

These recommendations are being reviewed by NIH.—**COLIN NORMAN**