Scientific Cooperation Endorsed at Summit

Largely at the prompting of President Mitterrand, science and technology have been placed on the international agenda

Paris. One of French President François Mitterrand's most significant—if least noticed—diplomatic successes at the recent Williamsburg summit meeting was to obtain a commitment to greater collaboration in scientific and technical research between the seven nations represented. The commitment took the form of an endorsement by the heads of state of the conclusions of a working party set up at Mitterrand's direct prompting after last year's summit at Versailles.

On the surface, the working group's conclusions contain little that is new or unexpected, which may explain its relative neglect by the media outside France when it was published last March. Its report is prefaced by a recapitulation of familiar arguments in favor of international scientific collaboration and free trade, and it ends by listing 18 projects—several of which have been on the drawing board for years—in which one or more countries have already expressed an interest in international cooperation.

Politically, however, the report's endorsement at the Williamsburg summit is far more significant than its conclusions might suggest. It provides "top-down" support for international collaboration in science between the world's most advanced industrialized nations, and it could provide the principal political framework for future cooperation in fields that range from the funding of giant new particle accelerators to the harmonization of regulations governing genetic engineering.

"The single most important outcome [of President Mitterrand's initiative] is that science and technology have been discussed at two successive summits by the heads of state," says Robin Nicholson, chief scientific adviser to British Prime Minister Margaret Thatcher. "That has never happened before, and it must be significant for science and technology that it is happening now."

Similar, if more muted, enthusiasm has come from President Reagan's science adviser, George A. (Jay) Keyworth, director of the White House's Office of Science and Technology Policy (OSTP). "International cooperation in science and technology is going to become a greater and greater issue," says Keyworth. "It is in the U.S.'s interest to have broader participation, more planning, and more sharing in long-term research."

Initial U.S. reaction to President Mitterrand's proposals at the Versailles summit was skepticism. The proposals were contained in a rambling speech about the need to establish a new international division of labor in high technology. Part of the U.S. Administration—particularly, it is widely said, the Department of Commerce—saw the French President's keen interest in stimulating international cooperation in technology as little more than an attempt to provide multilateral, government-backed competition to the private sector.

Washington quickly rejected this particular goal. Yet Mitterrand's proposals struck a different chord with Keyworth and his associates, who have been arguing since the beginning of the Reagan Administration that the massive cost of experimental facilities, for example, in areas such as high-energy physics and fusion research, makes international cooperation desirable, if not essential. Keyworth points out that both Europe and the United States are currently spending about half a billion dollars a year on controlled fusion, and Japan is spending another quarter of a million dollars. "At the moment, highly redundant research is under way in each of these areas."

Keyworth's enthusiasm for greater collaboration in science and technology was sufficient to overcome skepticism elsewhere in the Administration. At the same time, the French, partly at the prompting of Mitterrand's personal adviser, Jacques Attali, who chaired the Versailles working group, had shown themselves to be much more pragmatic than many had expected.

"We decided very quickly to concentrate on practical proposals for greater collaboration," says Yves Stourdzé, director of the Centre D'Etudes des Systèmes et des Technologiques Avancées, which carried out the preliminary studies and provided the secretariat for the working group. "I think that our partners were very surprised. They thought they were going to have an ideological battle. But we were not in favor of that type of approach. Instead, we adopted a very British, pragmatic attitude by establishing a list of practical projects which might be of interest to two or more countries."

By following a strategy that was concrete, realistic, and flexible, the working group successfully straddled the political gap between Mitterrand's interventionist position (broadly supported by Japan and Italy) at one extreme, and the United States' free-trade position (adopted by West Germany and, to a lesser extent, by the United Kingdom) at the other. It was also able to keep the United States sweet by including a reference to the need to restrict the transfer of militarily significant technology to Soviet bloc countries.

One or more of the seven nations represented at the summit (plus the European Economic Community) have agreed in principle to take organizing responsibility for each of the 18 project areas, and the other countries will select individually those in which they wish to take part. The United States has agreed to serve as the lead country in five separate projects. Two of those, in which it is the sole leader, are in basic science, namely high-energy physics and solar system exploration. The United States is also heading discussions on collaboration on remote sensing from space.

The United States will act as co-leader in three other projects. It will organize international cooperation in fusion research, together with the EEC in Brussels (through which European nations currently coordinate their research in this area). A project on fast breeders will be jointly led with France, which is already eagerly looking for partners in the construction of a successor to the Super-Phénix reactor. And the United States will coordinate research on advanced materials—where Keyworth claims Europe currently leads the United States in areas such as neutron scattering—with the United Kingdom.

Finally, the United States has expressed a willingness to participate in five of the remaining projects: advanced robotics (led jointly by France and Ja-

pan); biological sciences (led by France and the European Community); photosynthesis (led by Japan); and two social science projects, one on the impact of new technologies on mature industries (led jointly by France and Italy) and a British-led project in which apparently all the countries involved at the summit have expressed an interest, on "public acceptance of new technologies."

The United States has declined to participate in projects in which, it claims, government actions could impinge on the interests of the private sector. These range from aquiculture, led by Canada with little interest so far from other countries, to a joint French-German project on high-speed ground transportation, in which both countries have already developed advanced technology.

The topic that appears to have generated the most controversy in the working group was biotechnology. Initially, several countries—in particular France and Japan—had argued strongly for the internationalization of biotechnology research, for example, through joint training programs and international exchange of research data. The United States, however, made it clear that it opposed any major new government-backed initiatives in this area, on the grounds that they would tread excessively on the toes of the private sector.

"We were very concerned that biotechnology would be difficult to collaborate on internationally," says John Marcum, assistant director of OSTP, who acted as Keyworth's deputy on the working group. "We do not want to set up a government competitor to our industrial forces." Several other working group members felt the United States was being excessively sensitive on this point, since few were proposing significant government subsidies for commercial activities. Some suggest that the strength of the U.S. position was largely motivated by a desire to appease hardliners in Washington skeptical of the whole initiative. But discussions are already under way between Britain and France to define proposals for collaborative research and for the setting up of an international information network along the lines of a national network already established in France.

Apart from the clear divergence in biotechnology, there seems to be general enthusiasm for the overall thrust of the working group's proposals. One reason may be that they have already been put to different uses as political tools in the various countries involved.

In France, for example, the working group's report has been quoted as international endorsement of President Mitterrand's strong emphasis on the central role of science and technology in economic policy. In Japan, collaboration in the working group has been used to reassure Japanese voters that, despite foreign criticism of its trading practices, the nation remains committed to international trade and economic cooperation.

Within the scientific community, too, there appears to have been some enthusiastic support, particularly from those who could directly benefit from the proposed collaboration. Referring to the U.S. agreement to search actively for international partners in solar system exploration, Eugene Levy, professor of planetary science at the University of Arizona and a member of a panel of the National Academy of Sciences already looking at possible joint missions with European space scientists, says that the Versailles initiative "ties in very, very well." Missions already under discussion, he says, could be seen "as the first steps in a more ambitious collaborative effort," perhaps culminating in joint funding for such long-desired projects as a sample-return mission to Mars.

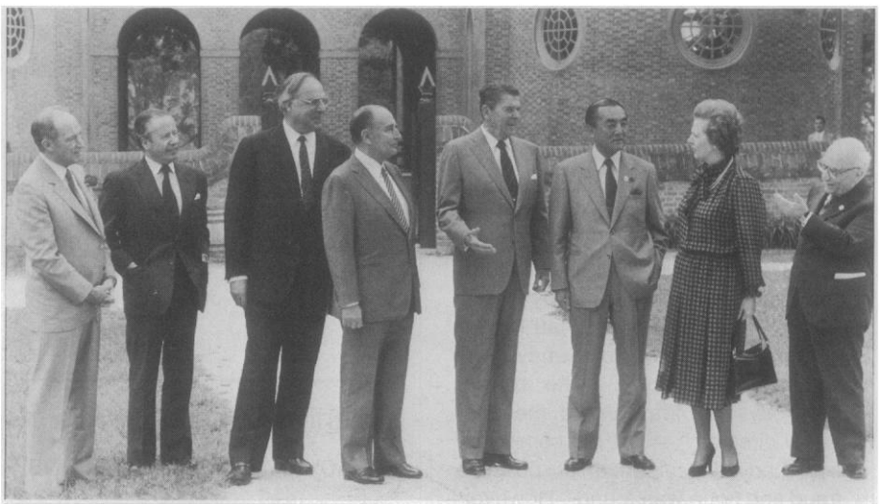
Even in the short term, the report's endorsement by national leaders is beginning to have an effect. Although no country has decided to allocate any new money to specific international ventures (as France had, at one stage, been intending to do), several argue that the report will be most effective by providing a powerful political endorsement of proposals for funding international research, particular projects falling into one of the 18 listed categories.

The final communiqué issued at Williamsburg requested a further report on progress in each of the 18 areas, to be presented at the next year's summit meeting in London. And a relatively loose organizational structure—perhaps under the auspices of the Organisation for Economic Cooperation and Development—will be set up to monitor progress.

There remains disagreement, however, on how far cooperation should extend. "Some of us would have liked to spend more time discussing closer industrial cooperation in fields such as biotechnology," says Italy's representative on the working group, Umberto Colombo. "We may still find a way that is agreeable upon to cooperate at the industrial level, even on the basis that government should not interfere with market forces," says Colombo, a past chairman of the OECD's science policy committee and currently chairman of the Italian National Commission for Nuclear and Alternative Energy Sources.

OSTP's Marcum, however, says that the boundaries of U.S. participation are clearly drawn. "The U.S. posture will continue to be that the greatest prospects for cooperation belong to those projects which are longer term, high risk but potentially high payoff, and that are sufficiently remote from competitive concerns."

Despite such differences, however, there appears enough common interest between the advanced nations to keep science and technology on the summit agenda. Keyworth argues that head-of-state endorsement is almost "required" for major international projects and that the economic summit is really "quite a suitable environment" to provide a regular monitoring and oversight. "We do not require a continual dialogue," he says. "I think the frequency of the summits is more than adequate for an annual look and reexamination of areas of cooperation."—**DAVID DICKSON**



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Straddled the political gap between France and the U.S. on technology policy