Europe Ends at the Iron Curtain

Most "European" cooperation is strictly West European

THIS year's Hewlett-Packard Europhysics prize, administered through the European Physical Society (EPS), was awarded in August to a Russian scientist. At least as far as the EPS is concerned, "European" science exists on both sides of the Iron Curtain.

In contrast, none of the collaborative research organizations that have been set up over the past 40 years, ranging from the European Laboratory for Particle Physics (CERN) to the European Space Agency (ESA), have felt it appropriate to admit countries from behind the Iron Curtain as full members (with the exception of Yugoslavia, which is a member of the European Science Foundation).

Whatever is said about scientists forming an international community, institutional cooperation between Eastern and Western European scientists remains hostage to the political differences that divide the continent. Most collaborative organizations draw their members exclusively—and some explicitly—from the 21 Western European nations that make up the Council of Europe, the body created in 1949 at the suggestion of Sir Winston Churchill to counterbalance the political weight and homogeneity of the socialist bloc.

Four factors do encourage some collaboration across the East-West divide: a shared scientific history stretching back over many centuries; the opportunities to exploit complementary skills and interests in specific fields—for example in space research, where the Soviet Union is offering launch facilities in exchange for access to research results; the use of scientific agreements as a proxy for more political accords; and the fact that in a growing number of research areas, such as acid rain or nuclear safety, the problems requiring scientific understanding do not respect political boundaries.

There are, however, strong factors that tend to discourage collaboration. Although the Cold War animosity toward the Soviet Union has died down, it has been replaced by growing concerns over technology transfer. These concerns are not confined just to military technology, for there is a conviction that Eastern bloc countries are using collaborative research projects to get hold of Western Europe's scientific and technical knowledge on the cheap.

Equally significant in practical terms are differences in the way in which science is organized. In Western Europe, scientific academies and professional bodies operate independently of state control; in Eastern Europe the situation is the reverse, since the academies are the main bodies through which the state carries out its science policy.

On top of this is the perennial shortage in the Eastern bloc of convertible (hard) currency. The EPS has been able to actively involve physics organizations from Eastern Europe in part because the relatively low cost of setting up meetings has not required a major commitment of hard currency.

Given these various complexities, most Western countries prefer to reach cooperative agreements on a bilateral basis. Each of the larger ones, for example, has a set of bilateral scientific agreements with several Eastern bloc countries. Some—such as the French-Soviet agreements on space research—are of extensive scientific breadth and depth; others, such as a cooperation agreement currently under negotiation between East and West Germany, have a more political purpose.

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Multilateral agreements are more difficult. CERN, for example, was set up in a way that excluded membership by Eastern European countries. Indeed, some of the founder states wanted the words "Western Europe" to be included in the name of the agency, but Switzerland vetoed the idea on the grounds that it would compromise the country's neutrality.

At the working level, scientists from Eastern Europe do participate in some West European ventures. For example, Soviet physicists regularly visit CERN, and the European Science Foundation (ESF) has several Eastern bloc scientists on its committees (including Roald Z. Sagdeev, director of the Soviet Academy's Institute of Space Sciences, who has just been appointed a member of its space science committee). But setting up the right terms for deeper institutional collaboration is a daunting diplomatic challenge, particularly in research areas that could lead directly to useful technologies, where the United States tends to keep a close eye on the activities of its European allies.

Consider the case of EUREKA, Western Europe's new program to stimulate cooperation in economically strategic technologies. Officials in several Eastern countries (Hungary, East Germany, and even Bulgaria, for example) have expressed an interest in taking part in EUREKA, and West Germany is already discussing a possible EUREKA project on ecology with a Hungarian research institute. There is, however, considerable opposition to generalized participation in EUREKA, primarily because of difficulties raised by intellectual property rights and technology transfer. The topic of cooperation with Eastern Europe will be near the top of the agenda at the next EUREKA ministerial meeting, due to be held in Madrid later in September.

Even in basic science, differences in approach make institutional cooperation difficult. Those developing plans for a new scientific academy, for example, say that they intend it to cover the whole of Europe—but then specify that, apart from Yugoslavia, this means Western Europe.

"Ideally we would like to take Europe in the widest political sense, but the reality is that to admit scientists from Eastern Europe could lead to all sorts of difficulties because the normal approach of these countries is to say that they only affiliate organizations and not individuals," says one of those involved in the preliminary discussions.

Soviet leader Mikhail Gorbachev's policy of *glasnost* promises to make things easier, in particular by limiting the impact of bureaucracy on the activity of individual scientists. "Things already seem to be improving," says one ESF official, pointing for example to Sagdeev's appointment.

But it remains clear that the boundaries of what can, for practical purposes, be described as "European" science will remain determined by political considerations. And this means that they will, apart from occasional exceptions (such as Israel's membership in the European Molecular Biology Laboratory at Heidelberg, or Yugoslavia's membership in ESF) remain essentially "Western European." ■ **DAVID DICKSON**