is best facilitated by modifying existing mechanisms to respond to scientific vision from the research community.

How can we link research groups from other countries to national collaborative groups? The MRC has a funding scheme for cooperative groups, where the aim is to bring together a critical mass of independent researchers and their projects to increase productivity. Enabling groups from outside the UK to join cooperative groups might prove effective in opening up science funding in Europe. Mobility of young scientists is an essential part of international collaborations. This is why we contribute to the international European Molecular Biology Organization and Human Frontier Science Program fellowship schemes and hope to make MRC research studentships available to all European Union nationals in the future.

POLICY FORUM: SCIENCE IN EUROPE

# European Science

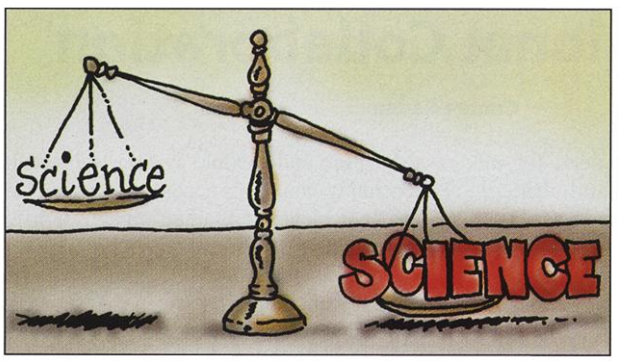
**Ernst-Ludwig Winnacker**

The global quest for scientific excellence has intensified enormously in recent years. In contrast to its competitors, such as the United States, Japan, or China, which have national institutions and a national culture, Europe is a multitude of nations, cultures, and languages. Now, only a small portion of science takes place at the European level. Accordingly, there are not only different stakeholders responsible for research in Europe, like the European Union, large European facilities, national governments, national research councils, and various national research institutions, but they carry quite different weights. Certainly, many national research councils are already using foreign experts to reduce possible national biases and thereby to set benchmarks for national research against international standards and competition. However, most evaluation exercises identify national, rather than European, pecking order.

The concept of the European Research Area aims at a higher degree of integration in European research by overcoming national boundaries and obstacles. It is driven by the recognition that basic research has intrinsic value, as well as driving technological progress and thus economic development.

However, present funding approaches have several limitations. First, only 4 to 5% of total research and development (R&D) funding in Europe is provided by the European Community within its multiannual Framework Programme, whereas, for example, the national research councils together have 30% or more of these funds at their disposal. Second, although some established European institutions such as the European Organization for Nuclear Research (CERN), European Molecular Biology Laboratory (EMBL), and European Space Agency (ESA) are undoubtedly success stories, they represent the rather small sector of "big science." Science-driven instruments for "small science" in Europe are much less numerous. Third, by virtue of the Treaty, the focus of European Community policy is on strengthening the scientific and technological bases of European industry. Furthermore, in trying to seek regional balance, it cannot, in general, apply the rigorous conditions necessary for identification of true scientific excellence.

So how can we proceed? It seems only natural that the national research councils of Europe are increasingly being challenged to search for new solutions. They operate in close contact with the scientific community, they work on the principles of scientific self-governance, and they have competitive selection mechanisms already in place to identify scientific excellence. They can achieve closer cooperation in several ways. They can, for example, open up their national programs to scientists from other countries; they can run joint, bilateral, or trilateral programs by sharing the respective costs; and they can permit scientists to take grants with them when they accept academic positions in other countries. In fact, such cross-border cooperation has increased in recent years. This is encouraging, but it may not be enough.




In recent discussions of EUROHORCs (*1*), I have proposed that we expand beyond current mechanisms of cross-border cooperation and aim for the creation of a European Research Council (ERC). To me, this would be an important instrument for European research at the independent, nongovernmental level of the national organizations, in parallel to the governmental level of the European Commission in Brussels. As a first step, this can and should be done without setting up a new administration. In my eyes, the European Science Foundation (ESF), the only European-wide body in which all these national organizations in Europe are represented, should be our partner for such a collaborative effort.

Several new approaches have recently been tried or put forward. The EUROCOREs (ESF Collaborative Research Programmes) are European-wide cooperative activities to foster the interaction of national funding agencies within the framework of ESF. The first three thematic priority programs (the origin of languages; continental margins; and self-organized nano-structures) have been set up with the aim of identifying the best performers and/or interactive projects through rigorous international peer review. The identification of themes is strictly bottom-up and is based on truly competitive mechanisms as they have evolved in most research councils. Another activity under discussion aims at the creation of high-level European junior research groups, headed by top-quality junior scientists, who would set up mixed European research groups in a country that is not their own.

I suggest that, for a start, each participating council should contribute roughly 0.5% of its budget into a common pool. Thus, with an amount of about 25 m€, we would be able to initiate joint support for these two activities—European thematic priority programs on the one hand, and top-quality personal grants on the other. With a significant (although by necessity limited) advance, we can open the door to an ERC.

There is also a good chance of support for such activities from the European Union within the forthcoming 6th Framework Programme. Philippe Busquin's vision of a competitive and prosperous European Research Area certainly deserves our concerted effort.

The author is President of the Deutsche Forschungsgemeinschaft DFG, Kennedyallee 40, Bonn, D-53170 GERMANY. E-mail: winnacker@mail.dfg.de

**References and Notes**

1. EUROHORCs is the informal group of presidents and chief executives of national research organizations in Europe who meet for consultation twice a year; see http://www.eurohorcs.org/

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