Cell

The European Research Council on the Brink

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Basic research in Europe is about to receive a shot in the arm with the creation of a European Research Council (ERC). This new agency will sustain fundamental investigation into all aspects of scientific knowledge and should drive up standards of scientific research across the continent.

The history of the European Research Council (ERC) is brief but salutary. In the space of less than 2 years, the creation of an agency to fund basic scientific research throughout the European Union (EU), and possibly also in non-EU countries like Norway and Switzerland, has gone from the dream of a few scientists and administrators to an implementation plan firmly in the hands of politicians. For the first time in Europe, scientists lobbied forcefully and effectively for their own interests. There will be an ERC in 2007. The challenge now is to build a structure that lives up to the ideal of an independent and transparent agency that will have a significant influence on science in the whole European community.

Why Do We Need an ERC?

The notion of a European research area—articulated in 2000 by the then European Commissioner for Research, Philippe Busquin—laid out a vision to transform the European economy from its traditional industrial base to one founded on the application of research and technology. This idea was rapidly endorsed in a challenging and idealistic statement by European heads of government in Lisbon in 2000. They declared that, by 2010, Europe should become "the most dynamic and competitive knowledge-based economy in the world" (European Council, 2000). How could Europe achieve this ambitious goal given the enlargement of the EU to include 25 member states in 2004 (many of them with a poor research base) and with investment in research and development already trailing that of the USA and Japan?

The heads of the national research councils of EU member states considered what was most lacking in European research to meet the Lisbon agenda. At their meetings in 2001, they mooted the idea of a pan-European research agency for basic research that would improve funding and stimulate competition between research teams irrespective of their national circumstances. In early 2002, Enric Banda, Secretary General of the European Science Foundation (ESF); Hans Wigzell, President of the Karolinska Institutet in Stockholm; and Ernst-Ludwig Winnacker, President of the German research agency DFG, presented the case for an ERC (Banda, 2002; Wigzell, 2002; Winnacker, 2002). European "small science" needs an independent funding mechanism that would operate in parallel with the European Commission (EC) in Brussels, Winnacker argued.

The idea of an independent basic research agency that would provide a new source of competitive funding, set standards, and improve the quality of research across Europe quickly won widespread support in the scientific community. Scientists were frustrated by the bureaucratic funding mechanisms operating through the EC's Framework Programmes, which provide funding principally for large international consortia of research teams. The European Treaty (the legal basis of the EU) traditionally had been interpreted as binding the EC to fund only research that would strengthen the scientific and technical base of European industry—that is, applied rather than fundamental research. There is a pressing need for more money in the system. The EC provides only about 5% of Europe's total investment in research and development; the rest comes from national governments through their national research programs and from private investment (companies, trusts, charities, etc.). In addition, national funding in many EU member states is grossly insufficient.

Planning and Persuasion

In April 2002, a meeting of leading scientists and administrators in Stockholm sketched out plans for the ERC and called on the EU to set aside appropriate funding. A second meeting, in Copenhagen in October 2002, aimed to set a timetable for the new agency and arrived at a consensus that the ERC should cover all fields of knowledge: physical and life sciences, medicine, and engineering as well as social sciences and the humanities. Despite this desire to include all aspects of what in German is called "Wissenschaft," it was the life scientists who in 2003 took

the initiative to press the case for the ERC at the political level. The European Molecular Biology Organization (EMBO), the European Molecular Biology Laboratory (EMBL), and the Federation of European Biochemical Societies got together with several other European life science societies and organizations to form the European Life Science Forum (ELSF). The ELSF hired an executive coordinator, Luc van Dyck, who organized three meetings—in Paris, Venice, and Dublin—over the course of 2003 to discuss the ideal form of the new agency and how it should be implemented. In Paris, EMBO's Executive Director, Frank Gannon, framed the four big questions: "Should there be an ERC?" "Where will the money come from?" "What should it do?" and "Who should found it?"

Answers to these questions began to crystallize 8 months later at the Dublin meeting, when, to the great surprise of the small and select audience, the EC's Director General of Research, Achilleas Mitsos, announced that the EC was prepared to create the ERC and to provide its budget. Moreover, he assured skeptics that the EC would meet the scientists' stated requirements for an independent agency run by and for scientists at a distance from the EC's administration. Until then, the EC had been almost hostile to the idea of an ERC and annoyed by the implied criticism of its own funding mechanisms. Now, answers to the questions of budget, timetable, and administration began to take shape.

The remit of the Dublin meeting was to get the other disciplines of research on the ERC bandwagon. The ELSF invited representatives from physics, chemistry, mathematics, astronomy, law, and the humanities to participate. Most were favorable, although astronomy and space research are already well served by the European Southern Observatory and the European Space Agency, and law and the humanities often have a strong national focus based on a local language, which might not lend itself to European evaluation. Nevertheless, the outcome of the meeting was the creation of the Initiative for Science in Europe, chaired by Portuguese physicist José Mariano Gago, an interdisciplinary lobbying group to support the cause of the ERC and eventually possibly other aspects of European research.

It was, of course, not simply the ELSF meetings that persuaded the EC to throw its weight behind the ERC project. After the Copenhagen meeting, the Danish Minister for Research commissioned an expert group report on the concept of an ERC, chaired by the former Director General of UNESCO Federico Mayor and Mogens Flensted-Jensen of the Board of the Danish Research Councils. The report concluded that the EC should establish a European Fund for Basic Research administered by an ERC (Ministry of Science, Technology and Innovation, 2003). Meanwhile, an EC report on the economic implications of the Lisbon agenda (chaired by economist André Sapir) called for a boost in investment in knowledge (Sapir et al., 2003). The ESF had also commissioned a high-level group report on the ERC (chaired by former Chairman of GlaxoSmithKline and current Rector of Imperial College London, Sir Richard Sykes) that analyzed the need for an ERC and laid out the possible roles of the new agency (European Science Foundation, 2003). These three reports and others were, without doubt, highly influential in persuading the EC of the need for its involvement in the creation of the ERC.

In the space of less than 2 years, the ERC was beginning to take shape. However, national heads of government (who provide EU budget contributions) and Members of the European Parliament (MEPs) still needed to be persuaded that the ERC was a good investment.

In February 2004, our organization, ELSO (European Life Scientist Organization), launched an online petition calling for grass-roots support for the ERC, which collected more than 5000 signatures and hundreds of individual comments documenting the frustrations of basic researchers with the Framework Programme. The results of this petition were presented to the Commissioner for Research as well as to national ministers with responsibility for research. ELSO members were also invited to write to their MEPs in their national languages calling on them to support creation of the ERC. EMBO, in collaboration with the ELSF, launched a similar petition in June 2005 when budget talks for Framework Programme 7 (2007–2013) seemed to be putting the launch of the ERC in doubt. The Initiative for Science in Europe also kept up its pressure for the ERC throughout 2004 and 2005 by organizing two further conferences. It also penned a letter calling for action signed by 52 European science organizations (Initiative for Science in Europe, 2004) and lobbied the European Council, Commission, and Parliament.

Implementation

The EC has pressed ahead with establishing an administrative structure of scientists for the ERC. In January 2005, it created a committee chaired by Chris Patten (Lord Patten of Barnes, former European Commissioner for External Relations and former Governor of Hong Kong) to identify suitable members for a Scientific Council. The committee reported to the European Council of heads of government at their meeting in July 2005 in Cardiff and announced its selection of 22 members for the Scientific Council. The Council represents the cream of European scientists, including Swiss immunologist Rolf Zinkernagel, Finnish geneticist Leena Peltonen-Palotie, German developmental biologist Christiane Nüsslein-Volhardt, the young Spanish neuroscientist Oscar Marin Parra, Greek molecular biologist and former Director General of EMBL Fotis Kafatos, and Swedish biochemist Carl-Henrik Heldin. According to the announcement, the Scientific Council will be "an independent body whose role is to determine the ERC's scientific strategy and to ensure that its operations are conducted according to the requirements of scientific excellence." The first meeting of the Council took place on October 18, 2005.

The European Council, the European Parliament, and the EC have not yet approved the overall budget for Framework Programme 7, which includes the budget for the ERC (see Figure 1). The current Framework Programme budget is 17.5 billion euros over 5 years, 2002–2006. The budget for the ERC is expected to be of the order of 1 billion euros per annum within a few years. A decision on the ERC's budget is expected early in 2006. The European Parliament appears favorable, and the current Commissioner for Research, Janez Potocnik, has indicated that the ERC should have a significant budget. In the interim, Potocnik should provide an independent assistant to the Scientific Council to begin implementing ERC activities.

Challenges

The ERC is on track to begin in January 2007 at the start of Framework Programme 7. It has a Council of preeminent scientists and, probably, an appropriate start-up budget. But there are immense challenges ahead before the ERC becomes the agency that researchers dreamed of in 2003—most notably, how to go about administering what should ultimately be a multibillion euro fund for research that covers 25 different countries (possibly 27 countries in 2007), each with its own peculiarities of research structure.

Two years ago, there was discussion about whether the ERC should begin with a big bang or whether it should develop more slowly. A Communication produced by the European Parliament (Locatelli, 2005) recommended two phases in the ERC's evolution: a transition phase followed by a mature, independent structure. The Max Planck Society also suggests a plausible two-phase scenario. First, there would be an initial build-up phase of around 3 years in which the ERC is created, within the scope of the European Treaty, as an executive agency operating with a high level of independence from the EC administration. This would be followed by a second phase in which the ERC is transformed under Article 171 of the Treaty into a fully independent

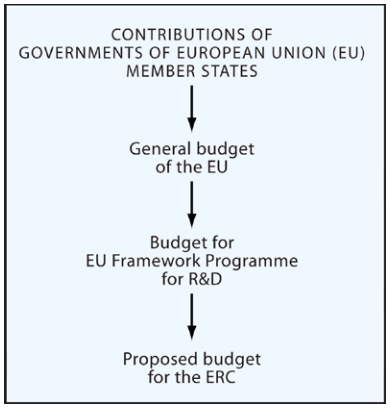

Figure 1. Cash Flow to the European Research Council (ERC)

intergovernmental agency. This two-phase scenario would give the ERC independence from the EC and would allow the budget and scope of the ERC to grow as a function of experience gained in the build-up phase.

The ERC administration must be not only independent of Brussels but also apolitical—that is, not subject to priority setting based on political objectives. It must be lightweight, demanding a minimum of administration and reporting by researchers that is consistent with appropriate accountability. And it must be transparent in its functions and decision making to win the respect and cooperation of scientists.

Another great challenge is how to manage the problem of oversubscription, particularly in the build-up phase. European researchers are hungry for funding. If the ERC is open to researchers in any subject area and from any EU member state, it will surely be overwhelmed with applications for what is in the first place a modest budget. Several ideas have been proposed to limit oversubscription, many of which fall into the trap of creating priority topics, which the ERC should avoid on principle. Our view, which is endorsed by the ELSF and others, is that oversubscription should be limited in the build-up phase by restricting applications to young investigators setting out on independent careers. The future of European research is in the hands of these young researchers. Europe desperately needs to fill the gap of trained independent investigators left by a wave of retiring professors in the coming 10 years as well as to meet the needs of the expanding knowledge economy. The ERC's support for young researchers, we believe, should be separate from and complementary to the European Young Investigators (EURYI) scheme administered by the ESF. In its second phase, with an increased budget, the ERC can begin to fund established researchers, either through traditional project grants or through Howard Hughes-style support of individual outstanding investigators.

There is also the challenge of creating a Europe-wide fair and transparent peer review process. Many EU countries have national research councils that might facilitate this process, at least by helping to identify appropriate reviewers, but some do not. Peer review at the ERC will become a crucial driving force for science in Europe. It will set the standard for research across the continent and will provide a "quality stamp" for worthy investigators and for teams whose national systems may be inadequate to recognize international-quality research. It will also help EU member states to recognize new areas of research and to develop their own national research funding. So, it is crucial that the ERC establish an international peer review process that is just and accountable.

The composition of the Scientific Council and the backing of politicians and administrators demonstrate the broad enthusiasm in Europe for the ERC. There is a clear conviction that this agency is necessary, and there is a will to see it through. By creating a level playing field among competitors for research funding, the ERC should drive up the quality of research in all EU countries. The ERC should help the new and developing member states to kick-start their research bases. It should invest in the new talent Europe needs to sustain its knowledge economy. It should influence the evolution of the Framework Programmes. In short, the ERC has the potential to transform the landscape of European research.

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