Research politics, bottom up

A European Research Council may soon become a reality. But not all obstacles have yet been overcome

For years, the scientific community in Europe has complained about what it perceives as a deeply flawed research funding policy on a pan-European scale. The main criticism has been directed at the European Commission (EC) and its Framework Programmes for largely ignoring basic science and focusing its funds on product-oriented research and cooperation across Europe, often with social, political or economic strings attached. Many scientists maintain that, in order to increase the competitiveness of Europe's research base and consequently its economic success, the EC should rather support individual researchers and groups based only on the quality of their science. Increasingly dissatisfied with the situation and mainly led by the life scientists, Europe's researchers started putting pressure on the EC to create a new instrument to specifically support competitive basic research. It also became clear during these debates that only the EC is able to raise sufficient funding for such an instrument (Breithaupt, *EMBO Rep.*, 4, 336–338; 2003; van Dyck, *EMBO Rep.*, 4, 544–546; 2003).

Now that the scientists' cause is supported by several European governments, most notably Denmark and France, it seems that, at last, the EC is willing to act. Or that was the gist of the presentation Achilleas Mitsos, Director General of the EC Research Directorate-General (DG Research), gave at the meeting 'A European Research Council for all sciences' in Dublin, Ireland, this October. What Mitsos laid out was nothing short of a revolution in the EC's funding policy: EC Commissioner for Research Philippe Busquin would ask for at least an additional €1 billion from the general EU budget to be spent exclusively on competitive basic research. These grants would have none of the strings attached that have made the Framework Programmes so unpopular

among research scientists. "The basis should be competition and not collaboration," Mitsos said, adding "in our mind there should be exclusively one criterion and that is scientific excellence." Furthermore, scientists would be involved in every step and at every level of the decision-making process, to make sure that the money is spent effectively and wisely. For the more than 80 scientists attending the meeting, it sounded like Christmas and Easter had fallen on the same day, particularly as Mitsos' announcement lacked any ambiguity. Michael Ryan, President of the Royal Irish Academy, seemed to have anticipated this when he commented in his opening speech that "the tectonic plates are moving at last."

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Mitsos overlooked one important detail in his presentation: who is going to distribute the extra funding? Although he remarked towards the end of his presentation that "[the EC] will be very open to any form [of governance] that will maximize the guarantee that the [requirements for basic research] are there," he arduously avoided using the terms 'European Research Council' or 'ERC'. Scientists already have their own ideas about this small detail—in fact, this was the reason for the interdisciplinary meeting, organized by the European Life Science Forum (ELSF) in conjunction with Euroscience, an organization dedicated to promoting science and influencing science policy. For most scientists, there is no

question that only an independent and autonomous European Research Council, run by Europe's top scientists, can ensure efficiency and quality.

The fact is that Europe needs an ERC to promote high-quality research on a pan-European level. The arguments put forth in favour of an ERC stress that it would raise scientific standards across the continent, create a 'common market' for research to overcome or bypass national fragmentation and, last but not least, entice emigrant scientists back to Europe. As Jean-Patrick Connerade, President of Euroscience, commented, without a European institution to fund basic research, "there is a great worry that targeted research is the only pan-European research," adding "We are not in a position where we actually have options." This has also become clear within political institutions in Brussels—as Mitsos said, DG Research is now ready to provide the bulk of funding for an ERC. What remained to be solved at the Dublin meeting were minor details about the scope of an ERC, the nature and size of the grants, and how it could support all sciences, including the humanities and social sciences; or so it seemed.

But when Julio Celis, Secretary General of the Federation of European Biochemical Societies (FEBS), presented the life scientists' proposal of how an ERC grant scheme could work, the subsequent debate morphed into an oriental bazaar in which several parties argued over individual preferences. Enric Banda, Secretary General of the European Science Foundation (ESF), emphasized the need to impose some restrictions to stop the ERC being overwhelmed with grant applications; Ian Halliday from the UK's Particle Physics and Astronomy Research Council (PPRC) questioned the political rationale for

an ERC that awards individual grants; Reinder van Duinen, President of the ESF, stressed the importance of engaging national research councils; and Clemens Sorg from the ESF's Committee of the Medical Research Councils (EMRC) ultimately saw no rationale at all for establishing an ERC. In short, the scientific community suddenly seemed to be as divided as ever on what the ERC should be and who should create it.

What was not debated, however, was the demand for more financial support to establish and maintain the necessary research infrastructure in Europe, after Fotis Kafatos, Director General of the European Molecular Biology Laboratory (EMBL), gave an overview of the infrastructure requirements of the various natural sciences. "We do need European solutions," Kafatos summarized, because of the immense cost of infrastructure, such as satellites, astronomical observatories and particle accelerators, and the requirement that they must be shared among many scientists, such as with biological databases and computing resources. There was only limited debate following the presentation, because virtually everybody agreed. This was also due to the fact that supporting infrastructure would not necessarily be a primary task for an ERC but could be added at a later stage, as Kafatos pointed out. "I want to emphasize that distinct tracks are required because it is inappropriate for shared resources to compete with research projects," he said, and because the money required would overwhelm the financial possibilities of an ERC.

However, the need to support individual research projects was widely debated. Understandably, the EC might be reluctant to give more than €1 billion to an independent organization without having any control over the use of the money. That may have been the reason why Mitsos avoided mentioning an ERC, and proposed funding for basic research as an additional task of the EC's Research Directorate—a "hostile takeover" as one attendee put it privately. The ESF, the representative platform of the national funding agencies, might fear losing political influence if a pan-European funding agency competed against them for grant proposals. That would explain why van Duinen repeatedly reminded the conference attendees of the necessity of involving national organizations in an ERC. Furthermore, the ESF itself hopes to become the

organization that could eventually set up and deliver the ERC. Jerzy Langer from the Polish Academy of Science presented the findings of the ESF High Level Expert Group, chaired by Sir Richard Sykes, Rector of Imperial College London (UK), that called for a European organization to support basic research and recommended that the ESF takes on this role (European Science Foundation, www.esf.org/newsrelease/63/ERC.pdf; 2003). Although reluctant to state their feelings openly, quite a few scientists admitted privately that the ESF would not be the appropriate organization to deliver an ERC. Finally, Halliday and Sorg, who questioned the political rationale for an ERC, repeatedly expressed concerns that it would be necessary to shape an ERC's policy in a way that is acceptable to politicians in their own countries—an argument that José Mariano Gago, the former Portuguese Minister of Science and Technology, was quick to denounce. He pointed out that the bulk of money would not come from Germany or the UK or any other EU member state, but from the EC, and that member states would in fact profit from such an infusion of research funds.

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The quarrelling only died down after Frank Gannon, Executive Director of the European Molecular Biology Organization (EMBO), made clear that no existing organization—be it the EC, the ESF or intergovernmental organizations such as CERN (European Organization for Nuclear Research), the European Space Agency (ESA) or EMBO—is in a position to deliver an ERC. The EC is simply not designed to support basic research; it is too large to react rapidly to new developments in science and, ultimately, does not have the trust of the scientific community. The ESF and the heads of the European research councils (EUROHORCS), as representatives of the national research councils, are not necessarily sufficiently independent to prevent *juste retour*—the demand that participating countries get as much out of an ERC in the form of grants as they put into it. Intergovernmental organizations are simply too

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narrowly focused on a single research field to become a funding agency for all sciences. "It seems therefore that what is needed is a new body building on the collective scientific community," Gannon concluded. Indeed, creating an ERC from scratch rather than relying on existing organizations with their individual drawbacks eventually emerged as the only solution that would guarantee sufficient autonomy and scope. Martin Huber, President of the European Physical Society (EPS) presented his organization's stance: "We view the ERC as essential for enhanced world-class fundamental research in Europe." Equally, Luc Lemaire, Vice President of the European Mathematical Society (EMS), subscribed to Julio Celis's proposals (European Life Sciences Forum, www.elsf.org/elsferc.html; 2003): "Mathematicians would welcome such a structure and would welcome the idea of bottom-up research." Pieter Drenth, President of All European Academies (ALLEA) commented: "We think it should be a new agency, call it an ERC. None of the existing ones would do a good job." Christopher T. Whelan from the ESF Standing Committee for the Social Sciences only expressed concerns that his discipline should be treated differently: "Quality should be defined in a manner that is appropriate for the social sciences and not in a manner that is imposed by other disciplines." *Juste retour* did not seem to be a problem either, even for the accession countries that will soon join the EU. Maciej Nalecz, Director of UNESCO's Basic Science and Engineering Division, spoke on behalf of Polish scientists who welcome an ERC, even if they stand a lower chance of getting grants from it, because it would eventually help them to improve the situation in their own country and strive for a higher quality of research.

Because things are moving fast, quick reactions are necessary. The EC will soon publish a communication to endorse funding basic research with EU money. The ERC Expert Group (ERCEG), appointed in November 2002 by the Danish Presidency of the EU to explore options for creating an ERC, will present its

conclusions in December 2003. The European Parliament and the Council of Research Ministers will then make their decisions as to whether and how to implement an ERC that could be up and running as early as 2005, or as late as 2007. However, the Council still have to approve this new appropriation of funds from within the overall EU budget, which is by no means given. "We must fight with all the support we have," Mitsos told the scientists, to convince the Council of the need to support basic research at a European level. So far, there has been "a remarkable amount of consensus" among the scientists who would use an ERC and the EC as the funding organization, Connerade said, but now "the scientists should get together and say what they need."

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"It has been the pressure by Denmark and the ERCEG and by you people that has triggered the EC to act," Mogens Flensted-Jensen, Vice Chair of the ERCEG, addressed the scientists, but warned that the momentum gained must not be lost. One early reaction was to draft a document to the EC and the Council that expresses the need for more support of basic research and represents the views of the majority of the scientific communities in Europe on how this could be organized. Other measures discussed included contacting members of the European Parliament and national governments to convince them of the necessity of establishing an autonomous and independent ERC. These are new tasks for scientists, many of whom are not familiar with this kind of lobbying, but finally seem to have found a case worth fighting for. As Federico Mayor, Chair of the ERCEG said, "This is a political issue, so we must follow the political route." But even if the dream of an ERC is not realized, the Dublin meeting highlighted an interesting development in the European research scene: for the first time, scientists from all disciplines gathered and discussed how to engage in and shape European research policy.

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Time for an overhaul?

The French system to fund and organize research faces various challenges in the near future. To keep up with other countries, it has to undergo some fundamental changes

Ever since the French government announced indiscriminate finance cuts in research last year, trimming one-third off every lab budget, the future of public research has become a great concern in France. This measure, aimed at relieving France's growing debt—a violation of the Maastricht treaty, which allows a maximum of 3% public debts—caused an unprecedented furore among French researchers and prompted much reflection on the future of scientific research. Critics feared that the budget cuts would not only hurt research, but also deprive young students of opportunities in research and discourage them from attempting to establish a career in a system that is often defined to be in malaise.

This year's financial perspective for French researchers improved after the Ministry of Research and Technology announced in late September a significant increase in research investment of 3.9% with respect to last year. But the French research system has other problems to address, mostly concerning its structure and organization. Most critics refer to its excessive centralization, its rigidity when it comes to recruiting scientists and appropriation of funds, insufficiencies in technology transfer and last but not least, the declining state of public universities. Indeed, there is an increasing awareness in both the research community and the political leadership of the current imperfections. More importantly, however, Claudie Haigneré, the new French minister for Research and New Technologies, has expressed a will to overhaul the current system and to carry out some pragmatic reforms to overcome its weaknesses.

Even if criticism of the French research system is mounting, the overall picture is not so negative. France's expenditure on research and development (R&D) of 2.13% of its gross domestic product (GDP) in 2001 was clearly above the EU average of 1.9%, compared with 2.7% in the USA and 2.98% in Japan (European Commission, 2002).

Within Europe, France spends a greater share of its GDP on R&D than the UK (1.86%), and occupies a solid fourth position after Sweden (3.78%), Finland (3.67%) and Germany (2.52%). Furthermore, President Jacques Chirac seems to be committed to increasing the spending rate to 3% by 2010, as was agreed among the European heads of state in Barcelona, Spain, in 2002. Two-thirds of the money will come from industry and the remaining one-third will be the government's responsibility (Gannon, *EMBO Rep.*, 4, 117–120; 2003).

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In addition to the input of funding, another useful indicator of a national research system's performance is the output of scientific knowledge—usually reflected by the number of scientific publications and their impact factor, that is, how often they are cited by other articles. According to the Paris-based Observatoire des Sciences et Techniques (OST), the contribution of French researchers to the world scientific publication output from 1997 to 2000 remained at a stable 5.2%, fifth after the USA, Japan, the UK and Germany. In 2000, the impact factor of French publications was 0.94, lagging only behind the USA (1.43), Germany (1.08) and the UK (1.05; *OST Newsletter*, 26; 2003, figures based on ISI data).

From a look at these data, "rather than talk of a declining status we should talk of a system in stagnation," commented Laurence Esterle, Director of the OST, in the institute newsletter (as above). There are many factors that contribute to this standstill. Philippe Kourilsky, Professor at the College de France and Director General of the Pasteur Institute in Paris, one of France's leading research campuses, pointed to the lack of autonomy of public