

A new partnership between science and politics

European scientists ought to adapt to new research policy paradigms • by *Luc van Dyck*

These days, science is not what it used to be. Most academic senior scientists spend much of their time in a continuous quest for money to pay for their research and their staff, hence their understandable frustration when excessive red tape diverts precious time away from doing 'real science'. Equally frustrating are the so-called 'priorities for research' when scientists find that their pet organism or favourite physiological pathway is not classified as 'priority'. Furthermore, many of them deplore the current emphasis on 'applied research'—whatever that is—and the focus on large infrastructures and platform technologies that, in their view, are now all the rage among European policy makers. Against this backdrop, the Framework Programmes (FP) of the European Commission (EC) have attracted their share of criticism and sarcasm from disgruntled scientists all over Europe, which is also reflected in the chaotic and sometimes hostile relationship between the EC and the scientific community. Now that FP6 is about to be implemented, it would be useful to take a closer look at the EC's science policy vision for Europe and to reassess the partnership between the scientific community and the Commission.

Last year, the European Life Sciences Forum (ELSF) asked its membership to respond to the EC's consultation 'Towards a Strategic Vision of Life Sciences and Biotechnology'. Among the very few contributions we received, one was indicative of a widely-held view within the scientific community: 'There has been something seriously wrong with the type and mechanism of EC research funding for a number of years, and this promises to deteriorate further in FP6. Many individuals and organisations [...] have tried to communicate both the various

problems and potential solutions to the Commission, but to little effect. The response, if there is one, is to deflect criticism, usually by some woolly statement about the need to involve the public more in discussions, etc. [...]. At the moment, the Commission has in place a system that prevents the funding of some of the most creative and innovative science being proposed. Such ideas constitute the potential competitive edge of European

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science that the Commission likes to talk about but presently wastes.' Such a statement is not only testimony to the existence of the 'ivory tower'; it also highlights and further nurtures the misunderstanding between the EC and the scientific community. Commenting in a recent article, André Goffeau regretted that 'Science for *Homo economicus* and *Homo faber* is flourishing, while Science for *Homo sapiens* is diminishing' (Goffeau, 2002). But even Goffeau did not mention the needs of *Homo civis*, and many scientists nowadays bring *Homo politicus* into disrepute.

In this context, it is essential to reiterate some basic principles that remain largely overlooked: the EC is not a funding agency, but rather the executive arm of a political institution; its missions cannot be compared with those of national research councils or other funding bodies, most notably the US National Institutes of Health; and academic scientists are not the only 'clients' of the EC's Directorate General (DG) Research. The justification for the involvement of the EC in research lies in Article 163.1 of the Treaty of Amsterdam (1996): 'The Community shall

have the objective of strengthening the scientific and technological bases of Community industry and encouraging it to become more competitive at international level, while promoting all the research activities deemed necessary by virtue of other Chapters of this Treaty.' To fulfil this task, the European Union (EU) member states charged the EC to implement a framework programme that would contribute to the socio-economic development of Europe and support research required for the establishment of other EU policies, for instance in the fields of health and environmental and consumer protection. The previous Commissioner for Research, Edith Cresson, applied this precept *sensu stricto*, such that even industry was not interested in participating because the deliverables were 'too close to the market', and the scientists' criticism of this policy was indeed well deserved.

But with Commissioner Philippe Busquin taking over the helm of the DG Research, a new ERA (European Research Area) began. Through this initiative launched in January 2000, the EU aims 'to become the most competitive and dynamic knowledge-based economy in the world, capable of sustainable economic growth with more and better jobs and greater social cohesion.' The major barriers to this ambition are substantially lower public and private R&D spending in most European countries compared with the USA and Japan and the weak aptitude for the conversion of knowledge into new economic and social benefits—the 'innovation' process. Other major handicaps are the different legal, regulatory, educational and other systems that coexist in the 15 EU member states. To address these challenges, the ERA concept relies on greater cooperation between member



Lesson one in gaining public support

states and the integration of research efforts and capacities at a European level. The new FP6 has been designed to meet these objectives through a series of measures and activities. These will certainly affect the academic world, notably by facilitating the optimal use of and transnational access to research infrastructures, promoting the development of an R&D industrial fabric, developing human resources, supporting the coherent development of science and technology policy across Europe including the mutual opening-up of national research programmes, and by focusing the critical mass of human, technological and financial resources to advance knowledge in selected priority areas.

FP5 adopted a very down-to-earth, problem-solving approach with milestones and deliverables. FP6 will aim to generate new knowledge using a multidisciplinary approach involving all players, from the basic researcher to the clinical scientist and industry, with the aim of converting scientific breakthroughs into applications and actions. But the key element of FP6 is that it will support curiosity-driven, targeted research built around the needs of the end-users, the consumers and the patients. This is clearly a new approach for most scientists, who will have to adjust to the system if they wish to benefit from

EU funding. Many seem to be ready to play the game—more than 13 000 'Expressions of Interest' were submitted to the EC—but only a few will be winners.

Funding basic research *per se*, whether big or small, is therefore neither the mission nor the objective of the EC. Establishing a framework that would, *inter alia*, allow basic research to flourish in Europe seems to be closer to the vision of the current administration in Brussels, in line with its political mandate. To reach this objective a series of hurdles such as public perception and acceptance need to be overcome, and indeed a great deal of the recent literature published by Brussels relates to science communication

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in its various facets and to a new partnership between science and society. European scientists, who are increasingly being asked to become involved in political and societal debates to tackle issues such as ethics, public perception or risk assessment, are well aware of this new deal. However, only a minority rise to the challenge while the vast majority do not

feel concerned or hope that there will be someone else to do the job. Scientific organisations, which are increasingly involved in science policy and lobbying activities, often also face the problem of mobilising their membership and overcoming scientists' reluctance for consultation.

Why is there this reluctance, which contrasts sharply with the attitudes of scientists in the USA? For many, it is probably a combination of lack of time, information, experience and/or appetite for the political process coupled with a suspicion towards the media and politics. There may also be false assumptions and a degree of arrogance, too. European scientists often stare with envy at the greener grass on the other side of the Atlantic, where their American colleagues find plenty of money for their research through competitive funding schemes, and dream of incorporating some aspects of the US model into the European scientific landscape. But if this is to be so, they should also question some of their traditions and taboos and be ready to adopt some of the behaviour of US scientists, particularly their willingness to get involved with politicians and the public. Not because the Commission is asking them to do so, but for their own interest. Clearly, the unpredictable nature of scientific endeavour,

although a reality, is not an acceptable justification for splendid isolation, at a time when research funding is no longer solely based on the scientists' demands. There has to be social responsibility, a respect for democratic and ethical rules and accountability to make research relevant—politicians and funding bodies are also accountable to taxpayers and society at large. Moreover, scientists have lost their virginity: the vocational character of academic institutions does not guarantee purity of intent, and some recent incidents have led to the loss of public confidence in scientific authority (Weingart, 2002). Hence the obligation of scientists to go public—to engage in a dialogue and not to 'educate'—and to gain the understanding of their audience, if not its acceptance.

Similarly, scientists are asked to collaborate with other stakeholders such as industry and consumer and patients' groups. Indeed, with a pinch of modesty, the scientific community must recognise that it is neither the only repository of truth nor the ultimate provider of solutions. Alastair Kent recently highlighted the benefits of collaborations with patients' groups in terms of access to new financial resources, raw materials and databases (Kent, 2002). He rightly stated: 'The support of patients' groups [...] can be uniquely powerful [...] to gain public endorsement in a way that those in academia and industry may not be able to achieve.' The objective of a dialogue between stakeholders is not to try and reach an improbable consensus but, while preserving the independence of each partner, to highlight the issues that are at stake, identify convergences and suggest ways of addressing divergences in order to facilitate both scientific cooperation and the work of political and regulatory institutions.

For all these reasons, engaging in a real, critical and constructive partnership with the EC may be judicious. The EC has already shown its willingness to listen to and involve the scientific community, as demonstrated by the Call for Expressions of Interest to determine the content of the first FP6 calls for proposals, or by the new Marie Curie Excellence Grants that will support individual researchers establishing their first groups, which has been a long-standing demand of the scientific community. Commissioner Busquin also established several advisory boards,

notably the European Group on Life Sciences (EGLS) composed of eminent academic scientists, to provide advice on the life sciences and to inform the EC on the current situation and on foreseeable developments. Public awareness, dialogue with citizens and between stakeholders, ethical questions, gender issues, risk governance and the use of scientific expertise in the decision-making process are some of the aspects addressed by the Commission in its Science & Society Action Plan. For instance, to overcome the reluctance of scientists to speak with

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journalists, the Commission intends to bring together 'representatives of the scientific community and the media [...] to encourage and support the development of guidelines for a more fruitful interaction and mutual understanding between the two'.

To promote awareness and integrity of researchers, module courses will be developed in the field of ethics. The EC is also promoting best practices in the decision-making process, notably the use of sound scientific evidence for risk assessment. Scientists, however, must realise that even if science can be described as neutral, this is not always the case for its products. Furthermore, acceptance of new technological developments can hardly be imposed on a public that is averse to risk if they do not see their own interests in these developments—the GMO experience shows dramatically how public acceptance can hinder a research field. Realistically, scientists cannot expect that elected politicians will make decisions on such sensitive issues against public opinion, unless they help in gaining the confidence of society.

Besides becoming more engaged in their partnership with society, European academics need to adapt their research and training missions to new structural paradigms (Oosterlink *et al.*, 2002). Freedom of research combined with the availability of research funds and of human resources is at the very heart of academic concerns. But there is now a clear uncoupling of

public funding and funding needs, and, given the budgetary situation of the EU member states and accession countries, there is no reason to believe that this trend will be reversed in the next few decades. Alternative sources such as charities exist, but their contributions will not be sufficient. During the Barcelona summit in 2002, the European Council—the heads of governments of EU member states—agreed to increase R&D investment with the aim of approaching 3% of GDP by 2010, up from 1.9% in 2000. Although this is a laudable goal, an agreement is not a commitment and it thus leaves room for incredulity. But assuming that the objective is reached, what can we expect? The spending increase should mostly come from industry whose share of the total investment would rise to two-thirds, similar to the figures in the USA—the green grass. For this purpose, the EU aims to raise the attractiveness of Europe for small and medium enterprises and global companies, through financial incentives, adequate regulations and intellectual property rights, etc. The academic sector is also being called upon. First, because a strong public research base is required: in the USA and in Europe, the industrial fabric originates and/or flourishes around centres of academic excellence, where it finds an emulative environment and the necessary human resources. Secondly, because a substantial amount of industrial research is expected to be subcontracted to academic laboratories. Through its framework programme, the EC aims to facilitate the development of the industrial fabric and collaborations between industry and academia, a strategy from which scientists will benefit. Dealing with industry, however, has severe implications in terms of contract negotiations, technology transfer and intellectual property rights, confidentiality and publication, laboratory and staff management, etc. University staff and scientists are often not prepared for these implications, and so there is a need both for specific training and for room for a whole new generation of project and facilities managers, public relations and technology transfer officers, and many other professions.

The current disaffection for scientific curricula and scientific and science-related careers is another aspect of the Science & Society Action Plan of the Commission, which supports financially various initiatives aimed at popularising

Communications from the Commission:

Towards a European Research Area: <http://www.cordis.lu/rtd2002/era-debate/era.htm>
 Life sciences and biotechnology—a strategy for Europe: http://europa.eu.int/eur-lex/en/com/cnc/2002/com2002_0027en01.pdf
 Science & Society Action Plan: http://europa.eu.int/comm/research/science-society/pdf/ss_ap_en.pdf
 More research for Europe: towards 3% of GDP: ftp://ftp.cordis.lu/pub/documents_r5/natdir0000023/s_1869005_20020913_174005_GERC021869en.pdf
 Benchmarking studies (including human resources in RTD and S&T productivity): <http://www.cordis.lu/rtd2002/era-developments/benchmarking.htmfrhlgl>
 Full text of the Sixth Framework Programme: <http://register.consilium.eu.int/pdf/en/02/st03/03635en2.pdf>
 Instruments for implementing the FP6 priority thematic areas: <http://www.cordis.lu/rtd2002/fp-activities/instruments.htmstrep>
 Analysis of Expression of Interest: <http://www.cordis.lu/fp6/eoi-analysis.htm>
 Other links:
 Sixth Framework Programme CORDIS service: <http://www.cordis.lu/fp6/home.html>
 European Group on Life Sciences: http://europa.eu.int/comm/research/life-sciences/egls/index_en.html

and restoring the attractiveness of science. The creation of a European Education Area that would be linked to the ERA is also foreseen. Indeed, scientific curricula could be reformed towards a greater versatility in scientific disciplines, and also to integrate elements of economy, entrepreneurship, intellectual property, communication and management. This will not only prepare students for careers in industry or alternative, science-related professions, but will also teach skills that are equally important for academic scientists (Wiesel and Banda, 2002). But to increase the attractiveness of the life of a Ph.D. student and a post-doc—the milking cows of academia who are immersed in a system that offers low gratification and nebulous career perspectives—the promise of social benefits and the legal measures advocated by the EC may not be sufficient (Moore, 2002). Developing a new form of mentoring that would help to identify long-term career goals and allow personal development of the trainees—a revolution for many senior scientists but a recurrent demand of the younger ones—is probably also an essential step (Clifford, 2002).

Clearly, despite the general negative attitude among scientists, the administration in Brussels does a great deal for European research and for the scientific community. Of course, scientists must be pragmatic and realistic in their relations with the Commission: it would be difficult to argue that both teams are playing in the same league. The scientific community as a whole is rather informal and unstructured;

the Commission is an institution with strict rules and missions that extend beyond the academic world. Some degree of flexibility can be found at the level of individual officers, but the EC is and will remain a mega-administration, and it is not always easy to know who is in charge of what and how decisions are made in this labyrinth. Furthermore, the Commission is itself controlled by the Court of Auditors, and the power of decision does not lie entirely in its hands. Certainly the EC has the responsibility to draft and implement the framework

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programme, but its proposal must be co-adopted by the Council of Ministers and the European Parliament, to whom the Commission is accountable. In these arenas, especially the former where most of the important decisions are made, the adoption process often leads to bargaining between representatives of EU member states, which often has very little to do with science.

This article is not a manifesto for the EC; it is rather a call to mobilise scientists and encourage them to face their responsibilities. The FP6 that will be implemented in the coming weeks is not perfect and it will certainly have to be modulated in due course to palliate its imperfections. For instance, it does not address some critical

needs of the academic scientists such as the sustainability of freely accessible databases. Furthermore, doubts are being raised concerning the long-lasting integration of research capacity once the EU funding terminates. But all together, the Commission has set up a framework programme that is in line with the ERA objectives and deserves credit for its long-term view. On the other hand, complementary to FP6, the creation of new instruments to specifically promote basic research is currently gaining momentum in the form of the European Research Council (ERC) (Banda, 2002a,b; Radda, 2002; Wigzell, 2002; Winnacker, 2002). The debate around this ERC certainly represents another opportunity for European scientists to get out of the laboratory, stay tuned and have a say.

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DOI: 10.1093/embo-reports/kvf250