A voice for science in Europe

An interview with Helga Nowotny, President of the European Research Council

EMBO reports: It has now been three years since the European Research Council (ERC) started to give out research grants. Do you think it has lived up to its promise?

Helga Nowotny: I think so. Most importantly, we have gained wide acceptance and trust in the scientific community throughout Europe. We are being noticed on the other side of the Atlantic and some people are even envious of our application to success rates. We went through an extremely quick phase in setting up the entire evaluation procedure, but, above all, we have seen some very positive developments that turn out to have a leverage effect that promotes improvement throughout the European Research Area.

One is that for the first time we see European universities competing with each other. The positive effect is that universities become aware that they must actively cultivate the young researchers they have in their midst. This is a very good sign. The other development that we see is that a number of countries are accepting our evaluation procedures as a kind of gold standard. This includes countries that themselves have high standards, but also some that are, for historical reasons, not yet up to international evaluation standards. For instance, Poland recently started to discuss setting up a new agency for basic research, modelled after the ERC.

The governments and national funding agencies of EU [European Union] Member States and Associated Countries therefore trust in what we do. In several countries this has led to imitation effects. The last country to join is Portugal where a Portuguese Starting Grant Scheme for young researchers will be set up. These are some of the developments that were not intended as such, but clearly show the leverage effect

the ERC had so far and that we want to continue. This is really ‘European added value’ as the result of establishing a first-rate, exclusively merit-based competition in basic research.

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EMBO reports: In a way the ERC is unique because its only criterion for selection is scientific excellence. Do you think this is a competitive advantage compared with the National Science Foundation and the National Institutes of Health in the USA and other funding agencies?

Nowotny: I think so, especially in the European context, because it is European taxpayers’ money that we are spending. Excellence is the only criterion that matters and we are not going in any other directions; we do not intend to have any dramatic changes, even when faced with the ‘grand challenges’, like energy, health, climate change, that the EC [European Commission] wants to tackle. We trust that the scientists know best where the frontiers of research are. We are also convinced that a number of very interesting scientific developments will emerge from basic research and hopefully new scientific and technological breakthroughs that will indirectly, but significantly, contribute to the grand challenges. But we are not setting any thematic priorities. Our approach remains based on excellence only and trusting the individual PI [Principal Investigator].

EMBO reports: Most ERC grants actually go to only a few countries. Do you see that

this could become a problem in the long run? That other countries could demand *juste retour*—a fair distribution of ERC grants based on their contribution?

Nowotny: My background is a field called Social Studies of Science, where this concentration phenomena—the so-called Matthew Effect in science—has been demonstrated for a long time: “Those who have will be given.” There is a very strong concentration in science if you go by excellence only, both in terms of institutions but also in terms of individuals and their careers. The critical point is, can we keep the competition open and fair and allow countries to catch up, at least in some domains? What we also see is a strong correlation between ERC grants and [research and development] expenditure in various countries. So, if there is chronic under-spending, where should the critical mass, a precondition for excellence, come from? It is also a signal to those countries that it is indispensable to invest into research and education and that they have to do more.

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There are preconditions, financial and institutional ones, that have to be met for excellence to grow locally because even if you have excellent people, if the environment is not right, they will move to more attractive places and it is a loss for the country. It sends out a clear and strong message to everyone who is concerned about research but also about innovation policy in their respective country.

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The Matthew Effect has yet another side. It does not go on forever and concentration reaches a saturation point. What happens then? There is a chance for other institutions to catch up and we can see this happening rapidly in China and India, for example. The ERC would like to increase the overall attractiveness of Europe as a first-rate address for frontier research worldwide. So, we have to recognize that there is concentration within certain institutions and countries in Europe, but this a strength and not a weakness. We have also been encouraged by high-level politicians in some of the new Member States who say “continue to set the mark for excellence only, don’t make any adjustments in terms of quality”. It may seem politically risky, but we will continue to do so.

EMBO reports: Do you see the national funding agencies supporting the ERC, or do they see it as a competitor?

Nowotny: You would have to ask them whether they see us as a competitor. I think a certain amount of competition is healthy for everyone. If we did not have a very good evaluation system, we would not be able to compete with the national funding agencies either, so it works both ways. Of course, both the ERC and the national research funding organizations are complementary and both share a strong interest in more money being spent for basic research. We have to continue to invest in the future science-base, which is the *sine qua non* for any society aspiring to continued economic growth and sustainable innovation. From that point of view, the ERC and the national funding agencies are in the same boat.

EMBO reports: The negotiations for the next EU Framework Programme for research are under way. Given the success of the ERC so far, do you think that it could lead to an expansion of its budget or role in European science?

Nowotny: My argument is that, given the fact that the ERC has been very successful within a short period, there is also an issue of sustainability. We see unabated demand, especially for the Starting Grants, without any drop in scientific quality in the applications.

Unless we are able to expand further on what we have achieved so far, a lot of the effort would be discontinued and nobody would like to see this happen. In terms of budget, I would like to see a doubling of what we have at the end of Framework Programme 7, which is €1.7 billion. This is the aim and we will see what happens. But the situation will become extremely tight because of the international economic and financial crisis, which is going to hit everyone, everywhere.

EMBO reports: How much influence does the Scientific Council have in these political and financial discussions and decisions?

Nowotny: Not so much, because this takes place among the big EU institutions and the big political players. In the end, it is up to the European Commission, which will propose the budgetary allocation, and the European Parliament, which has co-decision power, as well as the European Council. I have recently given a presentation on the ERC in front of the ITRE Committee [on Industry, Research and Energy] of the European Parliament and I was pleasantly surprised about the good attendance; parliamentarians, as you know, have many meetings competing for their attention. I went away thinking that there is a basis of support there. The big, possible ‘black hole’ that has emerged since is what will happen to ITER, the fusion project, which has skyrocketed in terms of unforeseen, additional costs. Since it is highly unlikely to be closed down, it will eat up a major chunk of the research budget of the Commission.

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EMBO reports: Ernst-Ludwig Winnacker, the first Secretary General of the ERC, thought that one of the challenges was to convince the hosting institutions and universities to offer young scientists with an ERC grant better career options. Do you see this happening?

Nowotny: We have not experienced major problems in this regard, but perhaps also

because we have taken preventive measures. Universities are the main beneficiaries of the ERC as the vast majority of grants go to university researchers. The host institutions realize that unless they do something genuinely useful for young researchers, they will move elsewhere. This is why we empower our Starting Grantees and make sure that they are offered the working conditions they need and deserve. ERC grants are portable and the possibility of moving elsewhere gives young researchers a certain leverage. In the UK this has been recognized as something positive and considerations are under way to facilitate the mobility of young people in a similar way.

“But above all, it is the sustained scientific enthusiasm of young researchers and seeing how an ERC Grant can change their life and career that is most gratifying”

EMBO reports: From the very beginning, you were the most ardent supporter of young investigators. Has this support materialized to your satisfaction or would you like to see more support from the ERC for young investigators?

Nowotny: Initially we had allocated less money for the Starting Grants, but we quickly realized the immense demand. So, devoting half of the budget for Starting Grants and expanding the eligibility age to 12 years past PhD seems to work out fine. But above all, it is the sustained scientific enthusiasm of young researchers and seeing how an ERC Grant can change their life and career that is most gratifying. You really begin to believe that there is a great future for research in Europe.

EMBO reports: In terms of balance, there is still the division between the social sciences and humanities and the natural sciences. The fact is that research in the natural sciences is just more expensive. Do you see this as a problem? Might the social sciences and humanities feel under-represented?

Nowotny: No, not at all. They have realized that the ERC is also there for them and are well represented. We started originally

with a rough budgetary division between domains. The social sciences and humanities started with 15%, now they have gone up to 18% because the demand is there. The life sciences have gone down slightly; the physical sciences and engineering have also expanded. So, the allocation of the budget per domain is demand-driven and we are willing to adjust as we go along.

EMBO reports: Do you think it makes a difference that both the Secretary General and the President are social scientists?

Nowotny: No, this has never been an issue. My predecessor, Fotis Kafatos, and the previous Secretary General, Ernst-Ludwig Winnacker, both came from the life sciences. We are right now in a delicate phase of selecting the new Director of the Executive Agency, who, according to the recommendations of the Mid-Term Review Committee will be an “eminent scientist with robust administrative experience”. This new position is intended to merge the function of the Secretary General with that of the Director of the Executive Agency. At the moment, it is too early to say what the outcome will be.

In general, neither the disciplinary background nor the country of origin of its 22 members has been a problem for the Scientific Council. It may be surprising to the outside, but we have not had any problems in communicating with each other or in adjusting to each other. We share a strong common vision, purpose and ambition. The Scientific Council has embraced the social sciences and humanities from the very beginning. Applications from the social sciences and humanities continue to come in and are treated like all the others. The ERC relies on its carefully selected panels to recognize and identify scientific excellence, which is always field-specific. In a sense, the ERC practices the more inclusive idea of *Wissenschaft*—and it works.

EMBO reports: Do you think that there is a danger that an executive agency could lead to more bureaucratization and red tape as it falls under the auspices of the European Commission?

Nowotny: Alas, an Executive Agency is an institutional construction that follows the one-size-fits-all principle. This is a problem because one size never fits all, especially not for an institution with the worldwide ambition of the ERC, which is setting new evaluation standards and new ways of doing things.

We are therefore trying to convince by example and by best practice, and to use as much leeway as the rules and regulations of the EC, which are also binding for us, allow. There are limits, of course. We have tried to shield the principal investigators from bureaucracy as much as possible, by shifting the bureaucratic burden to their host institutions. We hope that, with the Executive Agency gaining maturity and more independence and by continuing to improve its performance, some of the still persisting bureaucratic problems will eventually be overcome. The new Commissioner for research, innovation and science, Máire Geoghegan-Quinn, has announced that simplification is one of her big goals. We very much acclaim and support her in this endeavour.

EMBO reports: What about moving the agency away from Brussels into a scientific

centre to get it away from the influence of the European Commission? That would be a move the scientific community might support.

Nowotny: I don't think it is the geography that matters. Moving out of Brussels is neither realistic nor feasible. We have another review of the governance issue foreseen for 2011, which was recommended by the Mid-Term Review Committee, and has been unanimously supported by the Council of Ministers in March this year. The governance issues result from the fact that the ERC has a double head: a Scientific Council, which has the mandate to set the scientific strategy in a completely autonomous way, while the Executive Agency carries out its implementation and administers the whole operation according to the regulations for EAs [Executive Agencies]. Legally and *de facto*, there exists an imbalance

between the two, since the Scientific Council does not have a legal status of its own. The resulting governance issues will not go away but the question is how a governance structure can be achieved that gives the Scientific Council a proper legal status and to turn the ERC into a European institution *sui generis*. The Scientific Council has scientific autonomy, but not sufficient administrative autonomy in how to implement its scientific strategy. And yet, we are not thinking of moving outside the Commission structure in the end. A possible alternative would have been to get funding from Member States, but I do not consider this to be an option. We have to begin to work seriously with the Commission and with support from Member States and the European Parliament to find out what the best possible institutional solution could be. It is not just about having more power and influence, but of setting up the right kind of institutional structure that will allow the ERC to fulfil its unique mission and ambition as a world-class funding agency on a permanent basis under the next Framework Programme and beyond.

EMBO reports: Given that the Commission is protected from national interests, do you think that the position of the ERC as an agency of the Commission could help to shield it from *juste retour* demands?

Nowotny: The excellence policy is in the legislation and the Executive Agency has no bearing on that. In this respect, this is part of the way the ERC is working. What does it mean in the future? As I said, I do not see that obtaining funds from governments would improve matters, particularly at this moment. One positive thing about the Framework Programme is that the budget is fixed for seven years. So we can—perhaps except ITER—be relatively relaxed right now. We know that until 2013 the allocated

budget will be there. But we do not know what comes afterwards and there is some apprehension about it, since the competition about budgets will be extremely fierce.

“I would invite and exhort the scientific community to realize that now is the time to speak up for a strong ERC as one of the cornerstones of the European Research Area”

EMBO reports: The scientific community has been instrumental in convincing Brussels and national governments to set up the ERC. How else could they help?

Nowotny: There will come a point when we need the support of the entire scientific community, to convince politicians and Commission President Barroso that sustained investment into frontier research is also key to science-based innovation. The argument is straightforward: while not all innovation depends on research or science, without continuous investment into basic research, there will be no radical innovation in the future, i.e. innovation that has the potential of changing the technological paradigm of how the economy functions. This is what ICT, biotech and nanotech are all about now and we do not yet know what opportunities await us in the future. This message has to be conveyed loudly and clearly and we will need the voices from the scientific community to make it heard. The discussion has already started and we need to influence the debate.

EMBO reports: Do you see that this has generally been changing in Europe? US scientists have been much more active

and have wielded an enormous influence under various administrations. The Obama administration has also elected various scientists to high-level positions. Do you see that this is changing in Europe?

Nowotny: Well, I would say that with the ERC it is really the first time that the entire scientific community has engaged and hopefully will continue to engage itself at EU level. The scientific community is accustomed to speak out at national level. There are numerous eminent scientists who act discreetly behind the scenes and who influence and advise ministers and ministries. But at EU level there has only been lobbying for certain projects or by certain groups so far, but before the ERC there has never been such a full and all-inclusive engagement. This is the first time and I would invite and exhort the scientific community to realize that now is the time to speak up for a strong ERC as one of the cornerstones of the European Research Area.

EMBO reports: Do you think they will be heard?

Nowotny: Speak with one voice, speak at the right time, speak at the right places and above all, repeat, repeat, repeat the message and you will be heard. It is not a one-time-only pronouncement. You have to keep at it. After all, we are speaking for making Europe attractive through a strong, competitive European research base.

EMBO reports: Professor Nowotny, thank you for the interview.

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