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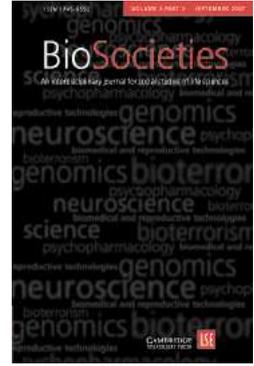
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Biosocieties / Volume 2 / Issue 03 / September 2007, pp 375 - 380  
DOI: 10.1017/S1745855207005790, Published online: 30 August 2007

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### How to cite this article:

Sarah Franklin (2007). Visions of Frontier Knowledge: An Interview with Helga Nowotny. Biosocieties, 2, pp 375-380 doi:10.1017/S1745855207005790

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# Interview

## Visions of Frontier Knowledge: An Interview with Helga Nowotny

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On 7 June 2007, Professor Helga Nowotny, one of Europe's leading sociologists of science, delivered the second annual public lecture of the BIOS Centre for the Study of Biomedicine, Bioscience and Society at the London School of Economics. Shortly before her talk, Professor Nowotny agreed to be interviewed by BIOS Acting Director Professor Sarah Franklin. Franklin was especially interested in clarifying Professor Nowotny's views on the implications for the social studies of science of the newly-established European Research Council (ERC) of which Professor Nowotny is vice-president. Launched within Framework 7 of the European Union (EU) research programme with a budget of €7.5 billion for the next five years, this Council arguably represents a new kind of vision of interdisciplinarity and collaboration, one that offers the prospect of bringing the social studies of science into much closer and ongoing engagement with the natural sciences.

**Franklin:** Perhaps I could begin by asking you to describe your contribution to the creation of the European Research Council?

**Nowotny:** I primarily got involved in the process that led to the establishment of the ERC through my function as Chair of the European Research Advisory Board. This body had already been established to advise the European Commission on research policy and consisted of members from both the academy and industry. Very early on we started to discuss what is now known as the 'knowledge triangle'—a term invented by the European Research Advisory Board drawing attention to the inter-relatedness of new discoveries, the educational system and innovation. We focused on how can you bring about new discoveries in Europe and we very quickly started to formulate a policy recommendation that something like the ERC is needed.

Independently of this work, I was involved in discussions in the Nordic countries of Europe—Sweden, Finland and Denmark in particular—that became champions of the ERC because they recognized that the national funding of universities would begin to level off. Swedish industry, for example, had begun to outsource even basic research, in this case, to India, and that was a shock for Swedish academia. The fear was that Swedish

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universities would no longer be able to maintain basic research in all fields, because the state would not give sufficient funds and industry would not be interested in funding basic research. The Swedish Royal Academy organized a meeting where, again, it was taken up that basic research should be funded at an EU level. In my view the small countries played a significant role early on in recognizing that the ERC would be needed.

I think it is also important to appreciate why all of a sudden this change in policy from funding basic research at a national level to funding it at an EU level came about. The scientific community had, of course, articulated a wish for this already in the 1960s, but the scientific community, even the well-organized life sciences, was not in itself sufficient to carry it through. Other factors played substantial parts too.

The legal treaties of the Framework programmes did not recognize that basic research should be funded at an EU level, they only recognized funding research that supports the competitiveness of European industry. And this is a very difficult link to make, to argue that basic research will increase industry competitiveness. It might do sometime in the future, but that's a fairly vague link.

So the change was to a large extent brought about through recognition that not just European industry but industry in general (with the exception of a bit of the pharmaceutical industry) is no longer engaged in basic research. And this changes the relationship between industry and universities because it puts universities in competition with each other. Industry can go and get the knowledge it needs wherever it wants to get it worldwide. And American universities are particularly clever in their advertising packages. So if you have a specific problem you turn, for instance, to Rice University in Texas and they offer you a package: they would work in basic research on your problem and they will also look at intellectual property rights, so they will take care of the problem you have, all the way from basic research to actually putting it in place, and this substantially changes the relationship between universities and industry.

And so gradually, within the EU, the idea came up, if we want to make the European university system more competitive worldwide, we have to do more to enable universities to also do basic research, and you can only do this at an EU level. Not only did you have scientific community alongside the European Research Advisory Board and the Nordic countries recommending and supporting this, but on the more political side you had Commissioner Busquin who was sceptical at first but then became convinced and went on to champion the ERC in a big way. Busquin's successor, who could have said 'no, I have different ideas,' has also become an incredibly enthusiastic and genuine supporter of the ERC within the Commission.

So these are some of the ingredients that may explain why this idea all of a sudden became an idea whose time had come.

**Franklin:** So you would describe the ERC as a significant shift in European science policy, as well as in European science funding?

**Nowotny:** Absolutely! It's the most innovative part of the Seventh Framework Programme. It is the most innovative thing that has happened at EU level for a very, very long time.

It has a revolutionary element in it too, because it is the first time that this sort of institution has been run by scientists, for scientists. The autonomy of the Scientific Council is guaranteed by the Commission, even if the administration is the Brussels administration, and we are now going through the phase of setting up an executive agency. This is not

as easy as it might sound; there are constraints as to what an executive agency can and cannot do. But the long-term goal is to be able to set up an entity that will function as autonomously as possible, including the administrative side.

**Franklin:** And would you say that your background in the sociology of science gave you some of the insights that have led you to be so committed to this way forward? Has it helped you appreciate why the ERC is so important?

**Nowotny:** Yes, it has definitely helped me a lot. Through my work in STS I have been in regular contact with people from the natural sciences and my eight years of teaching STS at ETH Zurich has made it relatively easy for me to understand the kind of thinking and reasoning used by colleagues in the natural sciences.

It has also helped me to understand the difficulties we faced in setting up the peer review evaluation panels. This was quite an interesting experience. We decided early on that we only wanted to have 20 panels. We now have to increase the number slightly because demand has been very uneven. For instance, in some parts of physics and, somewhat surprisingly, in engineering, we have had many more applications than we had expected. So we have to do some restructuring of the panels, but how do you go about dividing what in the Renaissance was called the '*globus intellectualis*' into panels that can manage uncertain numbers and types of applications? Here I must say the life scientists had quite an easy time, because they had a fairly unified vision of where they thought their field would go, or where the future of their frontier lies. We in the social sciences and humanities had a relatively easy time too as we are sort of more pragmatically anchored in what we have. The humanities are more heterogeneous so we gave them three panels and we divided the rest of the social sciences in two. But physics, chemistry and engineering had a lot of problems, and we ended up dividing them into eight panels!

**Franklin:** So here you really see knowledge in the making in a very fundamental sort of way. Do you think that your role as a sociologist of science, within the ERC and on other committees, has made the importance of this field more recognizable to the scientific community? Do you feel that your expertise has become more appreciated?

**Nowotny:** Well, it was proposed to include STS as a discipline and nobody objected so from this point of view it got visibility. And if we have, and continue to have, many good applications it will become even more visible. But that's not up to me, it's up to the people in the field to use the opportunity and to put in good proposals.

**Franklin:** Thinking about contributions from the STS field to science policy, if we look at something like Europe and stem cells, for example, we currently see huge variations in the way that that area of science is regulated and perceived. Sheila Jasanoff describes this as an example of what she calls different 'framings'—or styles of governance—and one argument would be that this sort of sociological contribution to science policy would offer a better understanding of the dynamics at work in creating this diversity. But I suppose another way of looking at it would just be that science has always been controversial and people have always had some resistance and maybe we don't need to know much more today than we did in the past. Do you have any feelings on that?

**Nowotny:** The diversity of Europe is very much reflected in this particular controversy. And the diversity is, from my point of view, very heavily influenced by the position of the Catholic Church on embryos. Yet interesting and often controversial developments in the science itself, where new ways are sought to produce stem cells without using and discarding embryos, may end up circumventing this religious opposition. So I would not be surprised that if, in perhaps ten years' time, this debate will have been superseded by scientific advances in how to produce stem cells.

History has shown us that sometimes, with the benefit of hindsight, these controversies can strike us as somewhat strange. One of my favourite examples is the opposition that existed in the United States in the nineteenth century against life insurance. At the time many people were opposed to taking out life insurance because they felt you were counteracting the will of God. But in the end, it was the widows left behind after their husbands were killed in a mine or something, and who were asking 'Who is going to pay for me and my seven children?' that won out. And this really just goes to show that the values we speak so much about today are not immutable. Values continue to change and evolve, and they're part of the overall configurations of how societies decide to live and to be governed.

**Franklin:** Some people are not very happy though with the idea that social science should just be helping to win greater public acceptance for stem cells anyway.

**Nowotny:** Yes, I'm absolutely against reducing social science to a sort of public relations agents that will help scientific endeavours win public acceptance. This is not our role. The role of social scientists is to carry out our own research on problems and phenomena linked to society and social change that we find interesting. This has always been one of the main driving forces for the social sciences: how do you capture the dynamic of societal change? There is always a new direction, a new configuration, so to follow this moving target you have to have an independent mindset, and you have to use the methods that you think are appropriate for the kind of questions you pose.

**Franklin:** That's a wonderful description of the task of the social scientist! But there are of course some people who think that social science hasn't really defined its role as clearly as it might have done or that it has been its own advocate as successfully as it might have done.

**Nowotny:** I agree partly with this, especially if you compare sociologists with the public visibility and role that economists have gained in the last 15 years or so. If you go back to the 1970s, I would say it was more a level playing field between economics, sociology and political science. But somehow sociology has retreated and to some extent become caught up in its own talk about crisis and self-definitions. Economists, on the other hand, helped and supported of course through the neoliberal dogma and the spread of neoliberalism, have taken on the kinds of research problems that could just as well have been dealt with by sociology or political science. The whole area of behavioural economics and institutional economics, for instance, could have become a much more interdisciplinary field in its own right than it has become. So I would agree partly with you, but only partly.

**Franklin:** A common complaint that sociologists often make jokingly about themselves is that we pursue things just because they're interesting and that we always come up with the answer that 'Well, it's just more complicated.'

**Nowotny:** Yes, but I mean complicated is not the same as complex. And there are social scientists who have been looking into complexity; Niklas Luhmann, for example, was somebody who wrote and thought a great deal about complexity, and I think it an excellent topic for social scientists to take on. What you discover when you look into complexity is that you have to have institutional solutions, or institutional arrangements, that answer or reduce part of the complexity. And that's a question that can be researched and not a sort of 'it's getting more complex and more complicated' answer where you end up nowhere.

Economists of course have the advantage of making things extremely simple and using models with simplified assumptions that are contra to everyday experience, but at least they get certain answers that you would not otherwise get. In the end I think you just have to practise methodological pluralism, and to know how to match your research question with the methodology that you want to use to answer that question.

**Franklin:** True, and I suppose at a place like the LSE the importance has also been about critique, that by specifying how things work you can also bring a critical perspective to them. And so social science has an additive effect; it's not just that one perspective is adequate, but we perhaps specialize in being able to bring perspectives together, which of course, could itself be a model of the kind of interdisciplinarity that may be needed in the future to deal with the science in society question.

**Nowotny:** And with a critical perspective it is important to link up your kind of criticism to the criticisms the people you are studying have. It would be arrogant to think that we are the only ones who have a monopoly on a particular kind of criticism. So I think you have to identify other people's critical stance, and link up to that.

**Franklin:** Yes, I agree with that very much. One final question, and I know it's a difficult one: there is a lot of talk about the science and society issue and you're someone who has actually done something significant and pragmatic in relation to that through the ERC, do you think that we are making progress in developing models to understand the science in society relation better?

**Nowotny:** Of course, I think we are making progress! I think we have understood that the co-evolution or the co-production of science and society is something that is of tremendous importance for the future, and that both have a very high stake in this.

I think natural scientists have made progress in realizing that without public support, without having a way of linking to society, they will not get very far. I think we as social scientists have understood that we cannot just retreat to a sort of critical stand and have a precarious—and very unstable I would add—position in between science and society. Social science knowledge, or social knowledge, is very much needed to bridge the various gaps and conflicts, and the more scientific and technological innovation we have the more social innovations are needed.

I am absolutely convinced that we are understudying the social innovations that occur not just to adjust to technological innovation, but also those that make technological innovations possible in the first place. And by social innovation I would include the new institutional arrangements that are put in place on an experimental basis, like the Human Fertilisation and Embryology Authority in this country.

**Franklin:** Well, thank you very much Professor Nowotny—I really appreciate you having shared your views on so many aspects of the question of ‘frontier knowledge’ and I wish you every success with your ongoing initiatives at the ERC.

*For further information on the European Research Council visit: <http://erc.europa.eu>*