

DEBATE SUMMARY

Bringing science to the heart of government: the Nurse Review of the Research Councils

Held at The Royal Society on 12th January, 2016.

The Foundation is grateful to the Association for Innovation, Research and Technology Organisations (AIRTO), the BRE Group, The ERA Foundation and the National Physical Laboratory for supporting this debate.

The hash tag for this debate is #fstnurse .

Audio files of the speeches are on www.foundation.org.uk .

- Chair:** **The Earl of Selborne GBE FRS**
Chairman, The Foundation for Science and Technology
- Speakers:** **Sir Paul Nurse FRS FMedSci HonFREng**
Chair of the Nurse Review and Director, The Francis Crick Institute
Professor Philip Nelson FREng
Chair, RCUK Executive Group and Chief Executive, Engineering and Physical Sciences Research Council
Gareth Davies
Director General, Business & Science, Department for Business, Innovation and Skills
- Panellist:** **Professor Dame Jocelyn Bell Burnell DBE FRS FRSE FRAS FInstP**
President, The Royal Society of Edinburgh
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SIR PAUL NURSE said that his review had been the product of a positive process of consultation and engagement. This included close working with the Research Council themselves -with support from an excellent Advisory Group covering the full breadth of the research agenda, a Reference Group which had explored specific questions and provided invaluable international expertise, and a call for evidence to which some 250 organisations had responded.

He had taken the opportunity of the review to set out some guidelines and principles on the conduct of research, with the primary emphasis on scientific research but with potential application to research in other academic disciplines. These described the different types of research – discovery, transitional and applied – and the subtle differences in skills, risks and opportunities associated with them. They covered the who, what and where of research: essentially good, creative and effective researchers, undertaking broadly scoped research with scholarly impact, wherever it was best carried out. They emphasised the enduring importance to the research endeavour of the need for decisions on research to be taken by subject experts, for high quality peer review and for an effective research agenda, which was freely applied within a culture that embraced both the acquisition of knowledge and a commitment to capturing knowledge for the development of solutions to the most pressing

economic, technological, social and environmental issues of the day.

He had been at pains to emphasise that the Research Councils had done well for many years, were highly respected across the world and had made significant contributions to knowledge and the economic and social good. We were, therefore, building from a high base. But it was important not to rest on our laurels. There were issues to be addressed; and the international environment was becoming ever more competitive – not least as other countries invested more in research than the UK.

He had concluded that the Research Councils were over-stretched administratively. Individually and collectively they needed more space and time to operate strategically and as leaders in the scientific community. More flexibility was needed on budget setting between Research Councils; and above all science needed the seven disparate Research Councils to speak with a stronger combined voice to the heart of government.

There were obvious gains to be derived from working more collaboratively and collectively. The process of maintaining high quality peer review across the board could only benefit from more effective sharing of good practice and from consistency and transparency on process and outcomes. All the Research Councils would also

benefit from collective and concerted commitment to diversity in approaches to supporting better research: at different levels (pilot, project, programme and major strategic studies); at different career stages (bringing on the best young researchers quickly to ensure their most creative period was not wasted and keeping older researchers engaged); through encouraging researchers from under-represented groups; and through seeking out and investing in excellence whenever it was found and being prepared to find it in unlikely places and not just in the established centres of excellence. Moreover, in seeking to advance the science and research endeavour it was vital to look beyond the Research Council to consider the way in which the Higher Education Funding Council (HEFC) interacted with this agenda (not least through the dual funding system) and to draw on the strengths of the charitable research sector, government funded research in Departments, commercial research (including the role of Innovate UK) and the increasing role of international research agencies.

All these considerations had led him to conclude that some changes were needed in the governance and structure of the Research Councils.

He had proposed the creation of Research UK – to be evolved from RCUK: a single structure bringing all the Research Councils together to speak with one voice and, by simplifying the transition costs of the existing system, to reduce the administrative burden on the Research Councils. The Chief Executive of Research UK would be the Accounting Officer for all the Research Councils, reporting to a single oversight body, which would have an independent chair supported by other non-executives drawn from leaders in the world of science. The integrity of the individual Research Councils would be maintained, for example by retaining their Royal Charter status. They would continue to be responsible for their own budgets and for building relationships with their own research communities.

The new structure would give greater scope for Research UK to generate a strategy for science and research for the purposes of interacting with central government. It would give more weight to the voice of science within the Department for Business, Innovation and Skills and across Whitehall - in particular in advising on policy for science. It should also facilitate the spread of good practice and much more effective data management, as well as reducing transaction costs; and it would create a forum in which a common fund could be agreed to support research which cut across the interests of different Research Councils.

An outstanding issue to be settled was whether HEFCE and Innovation UK should be represented in Research UK at executive level. He felt there was a strong case for such an arrangement, but understood there were others who had

reservations. Other structural solutions – such as representation on an oversight body - might be possible. For him the key principle was to strengthen the collective voice of research and science in government – and that demanded close engagement between the Research Councils, HEFCE and Innovate UK.

The creation of a stronger, more effective single voice for science in the form of Research UK, needed in turn to be matched by a stronger base for science within the structure of central government. BIS played a key role in this; but there was a need to strengthen the mechanisms across Whitehall for engagement between policy makers and research, not just at official level through the community of Chief Scientific Advisers but at Ministerial level as well. He had, therefore proposed the creation of a new Ministerial Committee. This should be chaired by a senior Minister with a cross-cutting Cabinet perspective. The Minister for Universities and Science should attend, together with other Ministers from other Departments who had a science agenda in their portfolio. The Committee would receive independent advice from Research UK, as well as other independent advisory committees such as the Prime Minister's Council for Science and Technology. In this way, while respecting the Haldane principle, a strong political base would meet a strong science base.

PROFESSOR PHILIP NELSON said that RCUK, of which he was the Executive Group Chair, was a strategic partnership between the Research Councils. There were seven Research Councils, each with a mission defined by Royal Charter and employing between them some 9,200 staff of which 8,000 worked directly on delivering research, 450 on programme support and 770 on administration. Each Research Council reported directly to BIS and each connected with a wide range of research institutes, centres, units and campuses. RCUK funded research covering the full spectrum of academic disciplines and was responsible for some £3 billion in research funding annually.

The outcome of the recent Spending Review had, in relative terms at least, been positive for science – with the allocation increasing in real terms. In international terms our spending on research as a percentage of gross domestic countries was lower and on a lower trajectory than China, France, the US, Japan and South Korea; but our research base remained highly productive and of high quality. Subject to the caution that these were lagging indicators, whereas our contribution amounted to only 3% of global funding for research, the UK contributed 8% of published papers and 16% of the world's most highly cited papers.

RCUK's mission was to combine excellence in research with impact. They supported the creation of new knowledge through funding discovery research, responding to society's challenges, developing skills, leadership and

infrastructure and leading the direction of UK research. At the same time they were responsible for driving innovation: creating environments and brokering partnerships; co-delivering research and innovation with 2,500 businesses and providing intelligence for policy making. The impact of this activity was wide ranging – from flood prediction to poverty alleviation. It showed a significant return on investment, estimated at £9.6 return on every £1 invested in research. In comparison with other countries for which data was available the UK ranked first for invention disclosures per unit of research expenditure, second for start-ups and spin offs and third for licence revenue.

That RCUK also had a significant international role: supporting research that crossed borders and disciplines; ensuring that the UK expertise contributed to the research needed to address global challenges; building collaborative research partnerships in emerging economies; funding collaborative research; and promoting the UK's world leading research infrastructure.

There were certain key principles which collectively the Research Councils considered were essential to the continuation of UK research. These were: the retention of the Research Council's seven strong science and business facing identities, recognising that the legal identity of the Councils was currently defined by their Royal Charters; the Haldane principle and a clear relationship with central government regarding research funding decisions, with funding administered via a non-departmental public body or bodies; clearly delegated authority and accountability for the independent management of research funding which, while accepting there was a case for more flexibility for funding of cross cutting research, was associated with stable multi-year investment; the dual system for funding research in UK universities and protection of the partition between these two funding streams; and the evidenced-based approach of peer review that identifies research and provides the basis for funding decisions.

The Research Councils were also committed to working together: improving operational efficiency through operating and acting as a single collective organisation, by building the capabilities of RCUK and through multi-disciplinary/interdisciplinary research and the new Global Challenges fund.

In these and other respects they were in agreement with a number of the principles and opportunities identified in the Nurse review; but in each case there were risks to be mitigated in taking forward the proposals.

They agreed with the need for strengthened strategic thinking and better engagement with policy makers and for operational policies that were effective, optimised, simplified and common where possible. The risks to be avoided here were too great a shift towards 'top down' strategy to the detriment of bottom up discovery science and

the potential for operational policies that stifled innovation.

They would welcome strengthened support for multi-disciplinary /interdisciplinary research and for a new mechanism for resource distribution among Councils to support emerging fields. The countervailing risks to be mitigated were on an overly strong emphasis on interdisciplinary research to the detriment of the strength of basic disciplines and any adjustments to individual Council budgets that hindered long term investment, flexibility and agility.

They, too, saw the opportunity for strengthening Research Council leadership through better support and the reduction of bureaucratic interference, so long as it was not at the expense of the currently strong governance arrangements and did not lead to increased bureaucracy through adding an additional layer of governance. They also recognised the potential for better co-ordination with other stakeholders across the research landscape, provided the risks of separating Higher Education research and teaching and to the mission of Innovation UK beyond the higher education sector were also recognised and mitigated.

RCUK would now be working with BIS on assessing the potential benefits, opportunities and risks of change, including the risk to business continuity through a period of significant change. Among the factors they had registered with BIS which fell to be considered were: how policy is informed through engagement with stakeholder communities; clarity and accountability for providing advice to central government; funding to Research Councils that maintained stability, agility and flexibility; the nature and levels of delegated authority and flexibility around the Research UK and the individual Research Councils; the legal instruments used to define and regulate the relationship between Research UK and the Councils; the ability to use the individual identities of the Research Councils; and governance for interdisciplinary research funding managed by Research UK and the Councils.

GARETH DAVIES recognised that this had been a period of significant uncertainty for the research community. However the boundaries of uncertainty were now narrowing. The outcome of the Spending Review had been positive for science. There was now certainty in funding for the next 5 years; and both the process and the outcome of Spending Review reflected strong support for science and research at the Treasury and in Whitehall as a whole. The Nurse Review had been published; and Ministers had welcomed the report.

A process of consultation was now under way. He could, however, set out some of the principles Ministers were adopting in relation to the review and some of the questions that needed to be explored.

It was clear that we were operating from the base of a world class science system, as evidenced by the figures on quality and productivity cited by Professor Nelson. That meant some things would not change: the focus on excellence, including the Government's commitment to the Haldane principle and to the system of dual support for funding research in UK Universities (where the question was how that principle might be more effectively locked into the system). Ministers were equally committed to the principle of using researchers with subject expertise to make decisions on allocations within their disciplines and to the maintenance of high quality peer review.

Nevertheless Ministers were committed in the light of the Nurse Review to exploring the scope for change in the areas Sir Paul had identified: the scope for reducing the amount of time the Research Councils spent on non-science processes; the case for a single strategic 'brain' to enable the Research Councils and the wider research community to put together a coherent strategic narrative which could be played more effectively into Whitehall and more broadly; the scope for overcoming the natural centrifugal forces in the existing framework to promote more interdisciplinary work in areas like obesity, counter terrorism and climate change; and the need for a relentless focus on value for money in the face of pressures on Government expenditure (as well as, more positively, on the scope for research to play into key questions of economic productivity such as the current crisis over flood defences).

Ministers were committed to moving forward with the creation of Research UK. They recognised there were a number of issues to be worked through, including the potential benefits but also the wider implications of integrating the QR dimension of HEFCE's work and the innovation agenda more closely with the new structure. No firm date had yet been set for a response to the consultation; but it would almost certainly be later this year. The Government would then set out a programme of implementation, including legislative proposals and a strategy for mitigating the risks associated with any structural change of the kind proposed. The voice of science and research was already well represented in Whitehall, not least through the increasingly effective network of Chief Scientific Advisers; but there was no doubt that the proposals under consideration would have to ensure that the research and science agenda was even more effectively connected into the policy making process in central government.

DISCUSSION

In the discussion it was clear that there was considerable support for much of the Nurse review. The emphasis on diversity was welcomed, although it was also important to guard against fashions and bandwagons from which the research agenda was certainly not immune. The commentary in the report on the principles underpinning excellence on research, including the

importance of high quality peer review, was also commended by a number of participants. The ambition to develop a more effective dialogue between the research community and policy makers at Ministerial level within central government was welcomed. A Committee of the kind proposed could, for example, help to shine a light on departmental research budgets that had not been protected in the same way as the Research Council budgets and could bring a much wider perspective on the collective science and research endeavour across central government, reinforced and supported by a more broadly focussed Research UK and independent oversight body. Arms length relationships were necessary, not least to preserve the Haldane principle. But the risk to being too arms length was that the voice of science was not heard – or heard when it mattered most. However, it would be vital to their success that the Treasury bought into the new arrangements.

There was considerable debate over the proposals for structural change in the report. Questions were raised about the likely effectiveness of the proposed oversight committee – for which, it was argued, the precedents were not promising. Was there a risk that independent advice from senior leaders in science would be diluted by corraling them into such a structure? Even if it did maintain an effective arms length relationship from Government, would it have sufficient teeth? Concern was also raised about the proposal to make the Chief Executives of the Research Councils subordinate in effect, to the Chief Executive of Research UK. If Research Council posts were seen to be downgraded they would not, for the future, attract people of sufficient stature. And would, for example, the voice of the social sciences be squeezed out, if Research UK were to be represented by a single voice?.

Other participants questioned the proposal to draw elements of the responsibilities of HEFCE and Innovation UK into the new structure. In the case of HEFCE concerns were raised that this might put the system of dual funding at risk and lead to the break up of HEFCE. In the case of the innovation agenda it was argued that it would be wrong to blur the focus of Innovation UK and unbalanced to locate its functions in the context of an emphasis on discovery science – particularly if this was in effect a line management arrangement. It was vital that industry continued to feel a sense of full ownership of Innovation UK – and that meant keeping it separate from Research UK, though not necessarily excluding some form of observer status in the new structure.

Those speaking in favour of structural reform acknowledged these and related risks, but argued that these could and should be addressed in working up the details of the proposals. For example, while there was a strong case for at least testing the proposition that, with appropriate safeguards, some of the functionality of HEFCE and Innovation UK could be integrated into

Research UK, there might be other ways of incorporating those perspectives: for example on the oversight committee, or using other structural devices. It was important to explore the devil in the detail, using the general framework set out in the report; but it was even more important not to be diverted from the ambition and boldness of the vision for enhancing the scientific endeavour set out in the review.

Other participants noted on the one hand the importance of working carefully through the relationship between the proposed new structure for Research UK and the devolved administrations (notably, for example, HEFCE was an England only body) and, on the other hand, the potential for bringing external, international experts into the structure on an advisory basis. The need to build up links with international research bodies was recognised – and not just in Europe.

There was an acceptance of the need for a stronger direct engagement between Research UK and the public, with the emphasis on improving public understanding of science and more on

building a dialogue which would inform and support research priorities. The regional agenda and the importance of 'place' in key Governmental strategies was another factor which should be taken into account – for example in relation to processes such as peer review.

It was also important that the voice of translational research was not lost in these new arrangements and to ensure that this was seen as an opportunity to develop stronger links between Research Councils and public sector research establishments (much of whose work was close to the discovery agenda) with more formal engagement on specific issues.

In drawing the discussion to a close the Chairman welcomed the lively debate that the review had engendered – and the clear evidence that the Government welcomed the thrust of the report and was committed to working with stakeholders on the detail. It was clear that there were tricky and sensitive issues to be resolved; but this was an opportunity to strengthen the voice of science and research which had to be seized.

Sir Hugh Taylor KCB

Open this document with Adobe Reader outside the browser and click on the URL to go to the sites below.

Ensuring a successful research endeavour: review of the UK Research Councils - The Nurse Review
www.gov.uk/government/publications/nurse-review-of-research-councils-recommendations

USEFUL LINKS;

Academy of Medical Sciences
www.acmedsci.ac.uk

AIRTO
www.airto.co.uk

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www.bre.co.uk

British Academy
www.britac.ac.uk

Department for Business Innovation and Skills
www.gov.uk/government/organisations/department-for-business-innovation-skills

Department for Employment and Learning, Higher Education Division, Northern Ireland
www.delni.gov.uk/articles/higher-education-division

Economic and Social Research Council
www.esrc.ac.uk

Engineering and Physical Sciences Research Council
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EngineeringUK
www.engineeringuk.com

The ERA Foundation
www.erafoundation.org

Government Office for Science
www.gov.uk/government/organisations/government-office-for-science

Higher Education Funding Council for England
www.hefce.ac.uk

The Higher Education Funding Council for Wales
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www.imperial.ac.uk

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www.innovateuk.gov.uk

Learned Society of Wales
www.learnedsociety.wales

Medical Research Council
www.mrc.ac.uk

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www.npl.co.uk

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www.rcuk.ac.uk

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