



Science and Technology Committee

Oral evidence: [Nurse Review of research councils](#),
HC 677

Tuesday 15 December 2015

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Members present: Nicola Blackwood (Chair); Jim Dowd; Chris Green; Dr Tania Mathias; Carol Monaghan; Graham Stringer; Derek Thomas Valerie Vaz; Matt Warman

Questions 1-63

Witness: **Sir Paul Nurse** gave evidence.

Q1 Chair: Sir Paul, welcome to our final session before the Christmas recess. It is very kind of you to come and speak to us about the review you have completed for Government on the research councils. I know you have spent a lot of time talking about it already, and it is very good of you to come and talk to us about it. Before we do that, as you also have a distinguished history working on setting up the Crick Institute, could you update the Committee on progress with that?

Sir Paul Nurse: Before I answer that, could I give two congratulations? The first is to Tim Peake, who has just made orbit. I think that is worth recording. I was invited to the lift-off, but this Select Committee being so select, I thought I ought to come here. Secondly, I thank and congratulate the Committee on its contribution to the spending review, which was extremely well received by the community.

Chair: That is kind of you, and we are very honoured that you are here.

Sir Paul Nurse: For the past five years I have been president of the Royal Society, from which post I stepped down two weeks ago, to be replaced by Venki Ramakrishnan, with whom you may well want to speak in the next year or two. I had also been running the Crick, but now it is full time.

The Crick is a complicated project funded by the three major biomedical research funders in the UK—the MRC, Cancer Research UK and the Wellcome Trust—and three universities. Essentially, it is a merger of the three MRC and CRUK institutes and inherits their core funding. You may have read about it sucking up all the money in the UK, which of course is complete nonsense. It is simply establishing the money that was already being

spent, with a little strategic grant from the Wellcome Trust. It is a complex merger, and it is a complex building. I hope I will be able to take you round it when we fully open.

We have some delays on the building—not in the fabric, which was delivered to us last month, but in the BMS, building and maintenance system, which is not yet quite working properly. It has to be working well for the animal facilities we have there, which are very stringent. We are now looking at occupation at the end of May, so it is several months over. We will start moving scientists in from the three institutes we are merging, which is the first phase, probably around July, maybe into August. I will be the first lab going in. We should have two thirds of them in by the end of September, and the rest by the end of the year.

Q2 Chair: Will the delay in it being fully operational and the challenges you are having with the building management system increase costs as well, or is that not the case?

Sir Paul Nurse: For the direct costs of the building and the running of the Crick, not at all really. I cannot quite say what the possible overrun will be, but it is going to be extremely small. I would not like to say exactly what it is, but, frankly, it is very small. However, a delay has implications for our MRC and CRUK founders because they have to maintain their present facilities for rather longer than they expected, so there will be some costs there, but at the same time the Crick will be saving some costs, and it is quite difficult to see how it will all come out in the wash. I can reassure the Committee that any financial hit is relatively small. There may be some, but on the size of the project—I remind you that the building alone is £450 million and the overall project is in the order of £650 million—it will be very small.

Q3 Chair: I am sure we will want to explore that a lot as you get up and running. You have already mentioned the spending review. Could you give us a bit of reaction to that? What were you pleased with and what would you still like to know about?

Sir Paul Nurse: A real terms protection for five years is a broadly positive outcome, certainly better than some that my more pessimistic colleagues might have been expecting. Indeed, it is positive given the cuts that occurred in other sectors. However, we need to recognise that spending in this country is sitting at approximately 0.49% of GDP. The OECD average is around 0.67%. I am sure you know all these figures. Germany, the USA and South Korea are all between about 0.85% and 1%, so we are at the bottom of the advanced nations in spending on research. That is quite extraordinary given that we are almost at the top in the quality and quantity of science we produce per capita for a country of our size. For the investment of 0.49% we are probably the most cost-effective research endeavour in the world.

When I was president of the society, I called for an increase over this Parliament in the next five years from 0.49%, as we are now, to 0.67%. In other words, I was aiming only at the OECD average, so in many respects that is a rather modest request. I still think that objective should be our aspiration, because we will spend it extremely effectively and it will be for the good of the country in many respects. It is broadly positive given what might have happened, but in my view still more could be done.

Q4 Chair: You will be aware that we have made similar recommendations on the need to increase R and D investment. You made a number of specific recommendations in your review, and they will be tested by colleagues in a moment, but I imagine you had discussions with Government subsequent to publication. Have you had any indication about how quickly and in what way they intend to implement the recommendations you have put in place?

Sir Paul Nurse: Actually, I have had no discussions; they have not asked to speak to me about it. I heard, as you probably did too, the positive comment by the Chancellor. I have heard nothing negative, but I have not had any discussions, so I am afraid I cannot enlighten the Committee.

Q5 Chair: That in itself is enlightening. In your judgment, how easy would it be to implement some of the key recommendations? The one I am thinking of in particular is setting up Research UK. Do you think it would require primary legislation?

Sir Paul Nurse: Yes. There are several elements to the review. I should admit at the very beginning that I went beyond my brief, because I did not confine my comments simply to the research councils but addressed other parts of Government-funded research. There are several components. One would be a political interface, but the question is how we can set up the other side, which is Research UK.

First, let's get clear what Research UK is. It is an umbrella organisation sitting on top of the seven research councils but connecting with other parts of the research funded by Government, as I indicated. Essentially, what I have tucked in there in some form or another—I have not been very specific about it, because there are different ways of solving the main issue, which is to get communication and interaction between the different elements—is HEFCE funding coming through a different route, which should be maintained completely in that different route, but would profit on both sides from better communication with research councils. The second component is Innovate UK, which is essentially the applied and more extreme translational arm of Government funding. The third component, which is often forgotten, is the funding spent by Government Departments on research. That is somewhat semi-detached from the research councils at the present time. There are interactions—in some cases, many interactions—but I am thinking of the major spend, in the Department of Health for example, which matches the MRC, the MOD and so on. There is a lot of money. I would like to see something that connects all of that together. It does not necessarily mean total authority—that is one possibility for parts of it—but we need a platform, a place where that can occur.

The particular issue is how that can relate to the research councils. I could not have been clearer in my recommendation that the research councils should remain as distinct entities. Sometimes in the last couple of weeks, people have used loose language about this being a merger. It is not a merger: neither the conception I had nor the recommendation. So that it is completely clear, I think our research councils have worked extremely effectively, and they are considered very effective around the world. To merge them would lose many things, and I would like the Committee to be fully aware of that. It would be disruptive; it would reduce agility, which is an aspect I looked at; and getting good leadership would be more difficult. At the moment the research councils are close to their own communities, and that would distance them from their communities. All of that would be a mistake.

I imagine the research councils working as they are. I do not think the leadership needs to be accounting officers; actually, we may want to talk more about reducing the administrative burden. We have to think about how Research UK could work. It may need primary legislation. In my report I talked more about the outcomes—what we are trying to achieve—than a precise mechanism. That was very deliberate, because I am not a lawyer. There are different ways of delivering things. What you need is clarity on outcome and will to deliver. Then the devil in the detail, which everybody talks about, will solve itself. I am sure of that.

What are we trying to achieve? We are trying to achieve independent research councils operating as they are, but with a cover that allows cross-cutting activities to be looked after more effectively. It is cross-cutting in the sense of both interdisciplinary and multidisciplinary work, grand challenges and a place where budgets can be properly discussed overall, in distribution between the different councils. Let me emphasise that, once that decision has been made, the research council budgets should be left alone for three, four or five years—I believe I referred to a three to five-year period in the report—because the research councils need the capability to lead. The research councils need budget stability and flexibility; they need to be able to take bold decisions. If everything is batted upstairs to yet another committee, they will not be able to do that. In some cases they need the ability to employ scientists' own facilities, so we have to solve all of that.

How can we solve it? I deliberately did not put that in. If you are asking me about ways in which we could think about it, I could use the metaphor of a university of different departments; another would be a university with subsidiary companies; another metaphor would be a holding company with companies. There are things we can play with to deliver it. Maintaining the charters perhaps in some common form, with variance according to the mission, would be reassuring to the community and ensure that that structure would be maintained. The real objective is to keep the research councils working as they are, but to have a place, with Research UK, that deals with the present difficulties and holes. I explained that in the report. I am happy to talk more about it, but that is the way I would view it.

Chair: I think Graham Stringer would like to go into exactly some of those points.

Q6 Graham Stringer: You talked about the strengths and how you want to protect them. What were the main weaknesses you found?

Sir Paul Nurse: One difficulty I saw was that the research council leadership had too much administrative bureaucracy, and that was partly related to the connection with BIS through the accounting officer role. That is one thing that should be controlled and minimised—just a practical issue.

Whenever possible, common practice across the research councils is a good feature that we should deliver. The councils needed some nudging to get that common practice. They were moving in that direction, but a single Research UK would help that. Common practice could simplify the outsider's view of the research councils and how they operate, because they sometimes have to interact with more than one research council, particularly for business. Ann Dowling's report emphasised the complexity that could be involved.

The research councils were trying hard on cross-cutting issues, such as multidisciplinary and interdisciplinary research, but by having a cross-cutting element to Research UK, that would naturally fall out, so that would solve it. Critically, I think we need a forum and mechanism to look at regular, but not too frequent, intervals at the amount of money allocated to each research council. If you look back at the percentage spent in each research council—I forget whether or not the Committee did some work on that—it has not changed very much over many years. The probable reason for that is that it is very difficult to change.

Q7 Graham Stringer: It is very easy to leave it as it is.

Sir Paul Nurse: Therefore, history determines future spend. That cannot be a good position to be in. I accept it is a difficult discussion to have, but it is better to have a difficult discussion than no discussion at all. Research UK can play that role. There is also an important role in interfacing Research UK with Government, which is the final point I wanted to make.

I felt that the research councils were perhaps too often second-guessing the Government's needs and wishes. I do not think that is a healthy way to run the show either. A structure that strengthens the arm of the research councils and the other components, looking for a proper debate and then a common position, which then interacts with Government itself in terms of allowing legitimate discussions to occur with Government—you may want to talk about the Haldane principle and so on a little later—is a much more open and transparent way to have those discussions, because there is clearly a need for political interface. Sometimes my more naive political colleagues think that there is no need for that. That is complete nonsense; there is a need, and it is better to have it well spelt out in a proper structure and format so that it is open and there is a good quality debate, rather than not trying to deal with the problem and having it occur behind closed doors, which is always a risk in this situation.

Q8 Graham Stringer: When I talk to academics who submit grant applications to research councils, one of the weaknesses they repeat to me is the high turnover of administrative staff and, therefore, the lack of experience—they have a vested interest—so the treatment of their research applications is not as good as it could be. Was that your experience when you were looking at the research councils, and, if it is the case, is there a solution?

Sir Paul Nurse: This issue comes up with every research funding organisation I have had anything to do with, whether it is the research councils, the Wellcome Trust, Cancer Research UK or the NIH in the United States, all of which I have had lots to do with. Scientists like to have somebody they can relate to, and I must say that when that changes it disturbs them. Quite often—not always—the individuals they are relating to are fairly junior, so they tend to be on a ladder of changing positions.

We need to make sure we have a good career structure and good quality people in the research councils. That is important. It is also important, as I mentioned in the review, that the research councils work on their interactions and engagement with the research community. For me at least, that is probably the most important issue, rather than that there is no change. It is probably quite good that there is some change, but it should not be

every six months; it should be every three, four or five years. That was the sort of change I was thinking of. It is commonly heard, and you are quite correct that it upsets the community.

Q9 Graham Stringer: If we can go back to how Research UK would work, we have seen in this Committee that scientists and science administrators are not all angels.

Sir Paul Nurse: Are they not?

Graham Stringer: They are not. They fight over turf and control. Do you not see that you are creating extra turf and the potential for turf war between Research UK and the seven research councils that have existed for some time?

Sir Paul Nurse: I am creating debate for certain, but, as I think that the decisions until now have been too much influenced by history and not sufficient debate, that debate is needed. Will it result in difference of opinion? I am sure it will, but if it is managed properly that can be healthy. It is right: academics fight over lots of things in turf war, but we are talking about the leadership of our whole research endeavour. The leadership is of a quality and maturity such that they will be able to deliver a proper and good debate about the issues with which to interface with Government. They are not just departmental heads in a university; they are the leaders of their research communities.

Q10 Graham Stringer: The research councils will still spend a lot of money and allocate money. Is it wise to take away their accounting officer?

Sir Paul Nurse: You should ask them directly, because they are the ones who are there. I do not think that for most of them it is a big issue, because they see it as reducing their load, but what they absolutely need is the responsibility to deliver their mission. That is achieved by giving them responsibility for budget stability over a significant period of time. There still needs to be some part that can be used for emergencies, for example, and new initiatives that arise and can be discussed, but budget stability is crucial. If we have that, most of the other problems go away.

Q11 Graham Stringer: If I can go back to a question the Chair asked at the beginning about the Crick Institute, I think last time you were here you said that, although all this resource was going to be in north London, you were looking at decentralising it to hubs outside London and to regional towns and cities. Is that project going apace?

Sir Paul Nurse: It has to be said that I am focusing mostly on the air conditioning at the moment rather than anything grander, but the answer is yes. We have to recognise that we have partners who have put in significant sums of money—the three London universities—so that is where my first discussions are occurring, but from the very beginning the strategy of the Crick has been to support the biomedical research endeavour around the UK. We are having many discussions both within universities and also with for-profit organisations. We have an arrangement with GlaxoSmithKline, and we are talking to AstraZeneca, to give you an example. We are creating connections and arrangements with Cancer Research UK institutes spread around the country—they are a

major funder—for training, particularly for clinical researchers, who are spread round the country; and individual collaborations between researchers are very much encouraged. One of the reasons for the Crick was to provide a place that generates that sort of support. That is very high on my agenda, once the air conditioning is working.

Q12 Chair: Sir Paul, I want to go back to your point about accounting officers. I know that a lot of the evidence to your review initially called for increased transparency and accountability from the research councils and so on. Are you not concerned that by reducing the number of accounting officers you will reduce accountability and transparency?

Sir Paul Nurse: It reduces the formal interrogation in the way you said, but that will still occur at the level of Research UK. The transparency part I was particularly concerned about was in the other direction, which is to make sure that the research community—those supported by the research councils—was fully aware of how decisions were being made. Maintaining the research councils as they are will allow that to happen, especially if it is encouraged and made a priority.

I added an explicit recommendation that there should be consultation with the public over a period of several years so the research councils had some sense of what the general public thought about some of these issues—in other words, increasing engagement. That is outside the traditional electoral, political system. The research councils were already doing that as part of their charter, but I felt it was important to say it explicitly, so that would increase transparency too. Transparency from the political system now has to come through Research UK, but what you would get is a co-ordinated view from the research councils and the other parts of Government spend, which I think is worth emphasising. How much transparency is there about Government spending, for example in the Department of Health? Here you have an opportunity to increase transparency by grouping it all together, perhaps moving it a bit outside departmental responsibility, which may not always be the best way to get transparency. There are real opportunities if we are creative about it.

Q13 Valerie Vaz: I read your report. I thought it was an excellent report with some interesting ideas. The preamble is quite inspiring for anyone who wants to take up science, so hopefully it will be disseminated to schools.

Sir Paul Nurse: I do not know about that, but I deliberately tried to write something a bit different from a normal report. I found myself reading the Haldane report from 1918 and thought that if anybody looks at this in 100 years, which I doubt, they should have something to chew on.

Q14 Valerie Vaz: I had my science career cut short by cuts in grants. We are sitting in the Thatcher room. It dates from that time, so today is quite interesting. Instead, I became a lawyer with a science background. I had to do a map of the proposals you were making. I did not read that the seven research councils were merged; I read them as separate with one accounting officer, the chief executive of Research UK.

Sir Paul Nurse: Correct.

Q15 Valerie Vaz: But Innovate UK, HEFCE and the Government Departments also came into Research UK. Presumably, as a result of that it is the chief executive, once you have the discussions there. I am not sure if you are thinking of having open meetings so the public can understand what is going on.

Sir Paul Nurse: You will see that it is difficult to come away with a clear idea of what I am recommending with respect to those three. I did not have a clear recommendation, because, as I said a few minutes ago, there are different ways to deliver what one is trying to achieve. What I am definitely trying to achieve is a forum where discussions and interactions can occur across all those bodies.

There is then a second debate, about which I am more agnostic, about whether it is part of the line management, if you like, in the same way that the research councils would be. In other words, I could imagine that the HEFCE component was or was not part of that. If you tortured me and said I had to come to a decision, I would put it there, but there are other ways of doing it by those who have more experience of how to run it—I think I said that somewhere. We have to listen to those who are running these things. Parachuting me in may be useful in some ways, but I cannot solve all those questions, so that would be HEFCE. I would put Innovate UK in the same category. The minimum is to have a place where the talking can occur, and it could probably be tucked under there all right, and it may get greater defence because that is one part that one suspects has been a bit vulnerable.

Government Departments are a bit more complicated because they are the responsibility of different Ministers, and I did not want to get into that political minefield. I wanted to deliver certain things and did not want them to be hijacked by specifics of that sort. Again, the minimum is to say there should be an input. I suggested one or two ways that could work, but I did not try to tuck it in under there because I thought that would be too difficult to deliver politically.

Q16 Valerie Vaz: I noted your recommendation about UK shared business. I thought it was a good idea to have someone else doing the admin work of the research councils.

Sir Paul Nurse: Yes, but the money should come from there into this grouping; the money is needed.

Q17 Valerie Vaz: Into Research UK.

Sir Paul Nurse: Yes.

Q18 Valerie Vaz: We've got that—noted that. Presumably, it is the chief executive who sits at the ministerial committee, which I think a previous report from this Committee suggested should be in the Cabinet Office. What is your view of that?

Sir Paul Nurse: The political committee is an important addition. Science will have an increasingly important role in modern societies and in the future. I would go further and say that it will have an increasing role in maintaining a good democracy, because so many of the decisions that have to be made in society are now impacted by science that it is key for democracy. We have to pay attention to how science is handled in that system.

Our starting point today is that science is the responsibility of BIS. It does not have to be there; it could be somewhere else, for example in the Cabinet Office, but as a minimum, if we are to have the status quo and leave it where it is, there is a need for another place beyond BIS for debates about science. That is what I was thinking of with the political committee. I was focusing on policy for science in that interaction; there is of course another whole set of issues to do with science for policy. Policy for science is absolutely important for BIS but it is also important in other Departments. Trying to square that circle, which by the way was not easy, I left it with BIS, which is the status quo, but had a committee that would be more cross-cutting so that we could engage other parts of Government. That is intentional, first, to broaden the debate, and, secondly, to get science out there in all those different parts of the political system.

Q19 Valerie Vaz: Are you concerned that a ministerial committee might not, for example, have agreed to the large Hadron collider because it was too expensive? You need dreamers in the scientific community in order to move on scientific research, and a ministerial committee might interfere with that and with the Haldane principle.

Sir Paul Nurse: You are talking to a hopeless idealist. I always think the best of people, including politicians.

Valerie Vaz: Good.

Sir Paul Nurse: In my experience, politicians listen and understand the issues when they are explained to them. I do not have the view that they are the devil incarnate and you just sup with them using a long spoon—obviously, you do not feel that either. We need to engage, and to talk to them. That committee would allow a very sensible debate about the issues and we would get the following. Let's take the LHC. Through Research UK, we would have a combined position from the research community, not just one part of it, that the LHC was something worth supporting across the board. Before that, it might not have been quite so easily delivered. Then there is a proper debate. It would involve large sums of money. What would it be likely to find out? It could be the ultimate structure of matter, why we weigh and things of that sort. That debate has to involve the political class. I was trying to have a very strong place for that debate to occur. I have confidence that that will deliver a better outcome than the somewhat more diffuse debates, which can be over-influenced by individuals and are not transparent.

It will be a much better way to deliver the Haldane principle. Incidentally, there is no such thing as the Haldane principle. If you read it, essentially it is a truism, which is that experts should make decisions about things that require expert people to make those decisions, if I can paraphrase it like that. That is patently true, but large infrastructures, big commitments and large mission statements have to involve a political interface, so I think it strengthens the Haldane principle.

Q20 Chair: Would you recommend that the minutes of such a ministerial committee be published in order to ensure transparency? I think that would be a concern if you were increasing the proximity between scientific and political decision making.

Sir Paul Nurse: If it works in the way I have just described, there is nothing but gain to be obtained from publishing. At the same time, I did not discuss that; I do not want to unhinge a process because something sticks; I am pragmatic about these things. If you want my view, I think they should be published.

Q21 Jim Dowd: Can I take you back to one of your earlier remarks about the share of GDP? We discovered this as well when we looked at the science budget earlier.

Sir Paul Nurse: The 0.49%.

Jim Dowd: We also discovered that the quality of UK research is exemplary; it is towards the top of the sector, as you said. If we can get better quality research for less than other people, why should we spend more?

Sir Paul Nurse: First, you are right; we are at the top, and in terms of quality we are equal to the United States. We are not in terms of quantity because we are not so big. If you look at the sums they are spending, they are significant. We already have a very efficient system, but the question we should be asking is a bit different. What can science contribute to society? I happen to think that it can contribute a great deal, not simply in driving the economy, although that is crucial for a sustainable economy that is increasingly complex to deliver, but for the public good in more general ways—protecting the environment, sustainability, protecting health and so on. This will improve only with increased investment, given where we are. I made a few remarks about that. In the report I did not talk about figures, but I did say that if you spend too much it gets wasteful, which is the crux of your question, and if it is too little the whole thing becomes dysfunctional. We are on the edge of dysfunctionality at 0.49%; we are nowhere near saturation. That was why I said 0.67% was a modest outcome. What you would see if we increased from 0.49% to 0.67% is not waste of money but greater investment that would lead to positive outcomes for the country, so I am very bullish about that.

Q22 Jim Dowd: I understand that there is no linear relationship, but under your proposals would the sector be able to absorb increased expenditure?

Sir Paul Nurse: Yes. I thought quite a lot about that. If you throw too much money at a system, it does not work very well. We have seen that happen in the US occasionally in the past half-century. In Nixon's war against cancer, for example, they thought you could solve a problem that was at that time rather insoluble just by throwing money at it. You cannot. But we would get a significant return for the good of the country as a whole if we increased the funding we have now. Wearing my Crick hat, I have to recruit round the world. I am absolutely on the edge of being able to do that, because I cannot compete at all with the United States. When I came back from the United States, where I was president of a research university, my salary went down to 40% of what I was being paid in the US. We are competing against the US and some countries in Europe—Germany, Switzerland

and so on—which are significantly better invested in this way, so we need this at the moment. I accept what you say: there is a point where it gets a bit wasteful. It is a little wasteful in some countries, but not here.

Q23 Jim Dowd: Scientists who go abroad as often as not have better facilities as much as better salaries.

Sir Paul Nurse: There are better salaries in the US. There are different ways of doing this sort of thing. I ran a research university in the US and saw some wastage, but it was the richest university in the US per capita, so perhaps it was not typical.

Q24 Jim Dowd: Could you describe briefly how individual research councils would be affected by your proposals? What will they do less of, what will they stop doing and what will they be forced to do more of?

Sir Paul Nurse: You will be talking to my colleagues, who will be able to answer that in more practical terms, but certainly my objective was to reduce their administrative burden in constant reporting individually for Government demands through BIS, which looked onerous to me. It will liberate that time to focus on their communities, and we will have the mechanisms and structures to enhance more strategic thinking, which of course they do. I do not want to criticise them; they are doing a very good job, but they would have more time to do that, and they would be able to engage others to help them with that strategic thinking, and therefore give better guidance and leadership to their community. I see the research council leadership, given the independence I am trying to argue for, as the leaders of their communities in the country for the purposes of research funding.

Q25 Jim Dowd: How would the funding mix between individual research councils be determined?

Sir Paul Nurse: That is obviously not an easy discussion, and I do not pretend that it is. To repeat what I said, I am not convinced there has been a proper discussion about it for quite some time. People may disagree with me over that. I would see it first happening at Research UK. The way I had imagined it is that, for example, if we got a little more money than just flat cash plus inflation, we could have created, above where we are, a cross-cutting fund for which the research councils could bid, and if they were successful, those could over time be integrated into budgets. You could experiment with new initiatives that could have the support of Research UK across the board, which is a difficult discussion for them, but with a good chair and those leading the research councils also having responsibility for the endeavour as a whole, it could work. It might also require some interface with the political leadership. For example, antibiotic resistance might be something easily identified as a political need. That could also be input through there, because it is perfectly legitimate for that to happen. I see that happening most effectively at Research UK with some cross-cutting budgets to deal with it, but not too high because then you weaken too much what is below.

Q26 Jim Dowd: Would the new global challenge fund fit into this structure comfortably?

Sir Paul Nurse: You mean the one from the Chancellor. There is an opportunity to inject new money. We have to make sure that it is not simply a way of getting new money but that it is actually effective. From my knowledge of the system, I think it can be. There are global challenges we need to support. We need international relations with those countries to prosper, and there is support of international science. All of that can probably be absorbed. I have not gone through all the figures and you should ask those who probably have, but I think a reasonable attempt could be made to do that.

Q27 Chris Green: In your report you anticipate bringing the Higher Education Funding Council for England research block grant process under the Research UK umbrella. If that option is delivered, how feasible would it be to keep the two elements of the dual support system separated?

Sir Paul Nurse: As I think I said in my report, I think they should be separate. They operate in different ways. If I can characterise it—caricature it, probably—research councils are responding more, not completely, but project programme grants are looking just towards the future. What the dual funding provides— Could I come back to that? There is something I forgot to say about Research UK that is really important. It is a place to gather all the data about the country's research. I should have mentioned that, because it is very important for many of the decisions we are making. It is also relevant here, because the HEFCE form of funding has a huge amount of data that can help inform research councils, and research councils have data that can inform the HEFCE style of funding. The way and style in which it works should be different. It gives independence to the research institutions, primarily universities—almost entirely so—and gives them agility on the ground and the ability to be bold, as long as they do not put it all into the gargoyles funds. I used to be at Oxford, so I used to imagine the gargoyles fund as one for maintaining the gargoyles; the money had to come from somewhere. As long as it is research-directed, which as far as I am told is the case, it is very important to maintain the two separate systems. I have no concerns that they would be comingled, because it should be set up in exactly that way. Do remember that I was not saying that it necessarily had to go under there, but the minimum was that there should be a place for discussion. It could work if it was put under there, as long as it was clearly distinct.

Q28 Chris Green: There would be a lot more closer working together and there would be a great many benefits from that.

Sir Paul Nurse: Yes.

Q29 Chris Green: What would you like the review of the research excellence framework to change? How would you like that to change?

Sir Paul Nurse: It has to be said that the REF causes a lot of heat, and not always as much light as it might. RAE and REF have improved standards in my lifetime. It has certainly correlated with that. Causality is another matter. It is onerous in the way it has had to be delivered. Academics do not like it. I did not particularly like it when I was an academic—I still am an academic but not in the same territory. It could perhaps be made simpler and

still deliver much of what we want, but it is important to assess what is being done, and that plays a role.

I do not like the gaming that goes on in universities. There are perverse outcomes. I see it all the time. Hope is a good thing, so you would hope that the concentration would be on delivering the highest quality research, but often there are ways of putting things together that are aimed at maximising income and not necessarily performance. I sometimes get a bit hot under the collar about impact, but only for one reason. I am very happy with societal impact, but there are two things I am not so keen on. One is when a certain percentage is allocated to impact when there are certain activities for which it is complete nonsense. I have written enough of these impacts. I am at the very discovery end. I can write this stuff and it sounds good, but it is nonsense. You get a big tick, but it is nonsense. That is one thing I do not like about it. I would ask for societal impact to be presented when it is clear what it might be, and not ask people to make up stories. Secondly, there is a need for what I call scholarly impact. People say that you get that by normal peer review. Actually, high level scholarly impacts, or paradigm-moving advances of the sort Thomas Kuhn would talk about, are not so common. I would like to see some recognition of scholarly impact as well.

Q30 Chris Green: You recommend that the “research councils should take collective ownership of the mapping of the research landscape.” Can the existing REF process, which has been criticised as costly and bureaucratic, cope with that? Can it deliver that?

Sir Paul Nurse: It has to be expanded, because not all research is in universities, although quite a big chunk is, and not all research is funded by research councils. The Wellcome Trust and Cancer Research UK between them account for close to £1.5 billion a year. These are very large sums. Rather perversely, the activities in mapping the landscape tend to be focused on limited parts of the system.

Q31 Chris Green: Parts of a system that is already familiar with itself.

Sir Paul Nurse: Yes. What we should do is give Research UK, which is no longer Research Councils UK, responsibility to look at research across the UK, which would include discovery research and not-for-profit research, but also what is out there in business and commercial activities as much as possible. That is happening at the moment. GO-Science is almost certainly looking at this, but a more systematic approach would be better coming from RUK covering all those bases, which is absolutely required for proper strategic debate.

Q32 Derek Thomas: The spending review announced that Innovate UK would be integrated into Research UK, on which you have touched briefly. That may in itself fly in the face of the Haldane principle. How do you see this changing the way research councils work? You have touched on it, but could you say a bit more? We have had a lot of details, but can you clarify a little further how you see that integration changing the way research councils work and changing their priorities?

Sir Paul Nurse: With respect to Innovate UK, or just the changed structure?

Derek Thomas: The integration of Innovate UK into Research UK.

Sir Paul Nurse: Innovation does not take place in the linear way I am about to describe. We see knowledge being generated in the research councils, some of which is going to be important for application and subsequent development. Innovate UK sits in that territory. Having them closer together and working in similar sorts of ways as much as possible—Innovate UK does operate in a somewhat different way—will make this less complex. That is a real problem from Ann Dowling’s report, and I touched on it too. It will improve it simply by making sure there are better connections. I want the Committee to be aware that these are already in existence. It is not that this is not happening; I am just trying to make it more effective by getting them closer.

Q33 Derek Thomas: You mentioned Ann Dowling. I think you supported the need to simplify the university and business links for innovation. To what extent will the integration of Innovate UK and Research UK help or hinder that objective?

Sir Paul Nurse: What I am told by my commercial friends who are science intensive is that they find the research landscape rather complicated to interact with. The research councils often have different rules, acronyms and names for similar activities. People lose the will to live a bit after looking at this stuff, particularly the smaller companies. The bigger ones will have a group to find their way round it. That is a pity, because it is the smaller and particularly the mid-range companies that can profit from this.

A single organisation like Research UK, which is aware of everything across the board, could say, “We could make this as common as possible.” We should not be ridiculous about it, because there are reasons why it needs to be different in certain cases. Innovate UK, which is much more mission-directed, will operate its near-commercial development and so on in a somewhat different way from the research councils; particle physics is handled in a different way from molecular biology. There have to be differences, but if we can get a common language and common systems as much as possible, it will go a long way to easing the relationship between commerce particularly and science.

Another point is that, if you have a common effective and transparent database, you have a one-stop place. If you are a company in Lancaster and want to do something about reverse osmosis, you can plug in and something pops up telling you that research is going on in a, b, c and d; commercial development is being funded by Innovate UK in e and f; if you want to consider it, you can talk to such and such; and possible grants you could look for would be x, y and z. We do not have something of that effectiveness, and all of that could emerge from the rearrangement.

Q34 Derek Thomas: How willing do you think commercial companies would be to develop it? Potentially, that kind of arrangement would be commercially sensitive.

Sir Paul Nurse: I am talking about publicly supported research that is all in the public domain, but if I was in a company and wanted to import into my company something about reverse osmosis, I would know where everything was going on, whom I should talk to and what grants might be available to do it. We are not compromising at all, because it is all on the public side.

Q35 Chair: Sir Paul, thank you so much. We have come to the end of the time that we have available, but I am very grateful to you for your comprehensive answers. You have covered the ground and answered us very openly. I am grateful to you for that. We might want to follow up with a couple of questions as we continue to think about the implications of the review.

Sir Paul Nurse: I would be delighted to come.

Q36 Chair: I would also like to thank you for the hard work you have put in, not just on the Nurse review but also at the Crick. We may well want to ask you to come back to discuss developments there, which the Committee considers are very exciting and strategically important for the UK.

Sir Paul Nurse: You should hold a Committee there. It is absolutely magnificent.

Chair: You have now given us a fantastic idea, and we promise we will not torture any witnesses. Thank you very much.

Witnesses: **Professor Philip Nelson**, Executive Group Chair, Research Councils UK, and **David Sweeney**, Director, Research, Education and Knowledge Exchange, Higher Education Funding Council for England, gave evidence.

Q37 Chair: Mr Sweeney and Professor Nelson, thank you for coming here. I know that you have sat through Sir Paul's evidence, which directly affects both of you in your working day. There are lots of competing principles in the proposals in the Nurse review, and in the Green Paper coming forward. You have the Government's commitment to excellence but also to place. There is their commitment to the Haldane principle and to the dual funding system, while merging and strengthening research funding in one body; and commitment to accountability and transparency, while reducing the number of accounting officers. I will start with you, Mr Sweeney. How do you feel about all this?

David Sweeney: We welcome Sir Paul's report and of course we welcome the Green Paper. Sir Paul points to the success of the UK research system. We are primarily responsible for university research and over 90% of the highly cited publications of university authorship, so there is much to celebrate in the success of UK universities. They are not just producing top quality research; they are producing highly skilled graduates for the country, transforming young and older lives by the intellectual work they do, acting as cultural centres in their area and they are major employers. They are very much more than just teaching or research. We welcome their research success. We particularly welcome the view of Research UK that provides for better communication and integration.

We have been really pleased in our funding to be supported by all the research councils, and by Innovate UK with strategic advice. We would welcome greater overarching strategic advice to our board on priorities to complement the individual project advice we have had. We look forward to working on that. We note the various proposals in Sir Paul's report—perhaps our chief executive serving on the Research UK board—and look forward to the Government taking it forward.

Q38 Chair: Are there any red flags raised for you in the report? Is there anything you look at and think, “We have to do that very carefully, or not at all”?

David Sweeney: Quite a number of ministerial decisions are required. Because Sir Paul, as he indicated in his report, did not have in scope the way in which HEFCE research might work with Research UK, he floated an argument that, as he said, could go either way. The Green Paper talks about options. For a ministerial decision to take place, there probably has to be a bit more evidence available than was possible, since Sir Paul was not taking evidence on that. It would be good if the ministerial decision was informed, as part of the Green Paper consultation, with as much evidence as possible.

The universities and other bodies are well placed to argue about the benefits of bringing together research and teaching funding; how distinct institutional funding is from project funding; how universities' strategic initiatives bring together teaching research; and whether looking at it solely through the lens of research or teaching is sufficient. If you close one eye and look at things through research and then through teaching, you do not get a full 3D view of what universities do. Our university buildings are used mostly for research and teaching; staff do mostly research and teaching; and the big decisions in universities look for benefits to students, academics in universities and university partners.

Q39 Chair: To be clear, you do not have any objections to Sir Paul's proposals specifically, or to the Green Paper. There is nothing in respect of which you come before the Committee to say, “We really don't like that.” At this point it is just about how it is done.

David Sweeney: Yes.

Q40 Chair: That is very helpful. Professor Nelson, how about you?

Professor Nelson: First, real thanks to Sir Paul for his report. In all sincerity, he has produced a very useful document and has conducted his review in a very open way, and we should thank him for that too. We had several meetings with him during which we let him know what we felt as chief executives of the research councils. He was very open to the arguments we were putting to him. A lot of the things we discussed with him are reflected in the report. We felt that our seven-strong science and business-facing identities were important. We acknowledged that more could be done, but, as Sir Paul acknowledged himself, we have delivered quite well for the country, and it would be a mistake to let that slip in any way. We want to preserve what is good about the current system, and I think Sir Paul heard that.

We talked about the Haldane principle. Again, Sir Paul was right. We referenced the 2010 statement of it, and we are quite clear that that was what we understood by it as well—that was published then. We also thought that having a non-departmental public body, or bodies, was important in ensuring the Haldane principle was met, and again that was reflected in Sir Paul's report. We felt as chief executives that we wanted clearly delegated authority and accountability for the independent management of the research funding that we were overseeing, and we wanted the transparency that goes with it. We felt very strongly about that. When you look across the whole landscape, there is huge scope in the disciplines we support, and we felt it important to continue to support that breadth in the UK. That was a point we made, too.

Although Sir Paul has already echoed it, a predetermined multi-year investment was very important to us to deliver our missions on a disciplinary basis. Stability of funding, budgetary authority and accountability were the key principles we felt it important to sustain, and again that was echoed in the report. We felt strongly that the dual support system has served us well and it is important. I do not think I have come across anybody who does not think that is important. You have had discussion with David about how that might be delivered in the future, and we understand those arguments and issues. We absolutely want to sustain the evidence-based approach to peer review that we traditionally use. That is another very important underlying principle. We tried to reflect collectively our view of all these things and made Sir Paul very much aware of our feelings. I think he took them very seriously in conducting his review. They are well and truly echoed. He states very clearly that we should remain distinct, and we welcome that sort of result.

Q41 Chair: Colleagues will probably pick up the question of dual support in a second, but can I ask about the commitment to transparency that you mentioned? Do you have concerns that reducing the number of accounting officers among the research councils will reduce transparency?

Professor Nelson: It does not have to. Provided it is properly managed, the process of reporting one's expenditure through an annual accounting process, for example, and making public all the inner workings of the councils, as we currently do, should ensure that transparency follows. I do not think that would necessarily follow from not having accounting officer status.

Q42 Chair: If you are still doing all the work of reporting the accounts and making it public and carrying out public consultation, will you be reducing the burden of bureaucracy enough to reduce the issue of overstretch?

Professor Nelson: If we have a properly harmonised approach to doing that, it should reduce the bureaucracy involved and the time and effort it takes; in fact, we are already working on it. We are already working towards a common process. Three of our councils now have a common professional services unit and are already doing that, so we have already seen benefits in making moves such as those Sir Paul suggests. I do not think there is an intrinsic problem; it is just a matter of how one enacts the recommendations.

Q43 Graham Stringer: Sir Paul's review is an implied criticism that the research councils have not interacted as well as they could have done with Government, and his report is a solution to the problem. Why haven't you interacted better with Government?

Professor Nelson: I do not think it is the interaction with Government per se. That is not my reading of it. My perception is that individually we have all been interacting with Government quite successfully. For example, we responded to the "eight great technologies" developed under the previous Administration. We have been very proactive in pursuing the mission to deliver what was seen as a great opportunity for the country, so we have done that well. I think—

Q44 Graham Stringer: So Sir Paul's report will not improve things.

Professor Nelson: I was just coming to the fact that we probably could do better in joining ourselves up more effectively. We all acknowledge that. The chief executives have come to the same conclusion: we could do better on that score. The other criticism that has been levelled at us is that in some respects we probably are not good enough at prosecuting interdisciplinary research. We understand that we need to do better there, too. Sir Paul's recommendations for how this can be addressed make eminent sense. I do not think there is any real dispute about that. We have been effective organisations, but Sir Paul is saying that we could do better collectively and deliver still better results for the country if we could get ourselves joined up more effectively. We are already trying to do that, so I can reassure you that we are on the case, so to speak.

Q45 Graham Stringer: The second criticism that Sir Paul has is that scientists have not kept to their side of the bargain under the Haldane principle. Scientists should allocate funding, but you have not bothered doing that. You said in 1970, or whenever it was, "This is the balance between the seven major disciplines and we'll stick with that." It is obviously very difficult to say to engineers that they will have less and particle physicists will have more, or vice versa. It is not an easy issue, but do you think that Sir Paul's solution will enable that rather difficult dialogue and decision making to take place?

Professor Nelson: I do not foresee a better solution. Sir Paul's suggestion about getting experienced, learned people round the table to help make those decisions is probably the best way to tackle it. I think we all accept that the ratios among the councils have stayed pretty steady for some time and that might not be the right answer strategically. I certainly do not have a better prescription than Sir Paul for tackling that, so I see the good sense in what he is saying.

Q46 Graham Stringer: You accept the two major recommendations. Do you see any problems with Sir Paul's report? Has it been well received within the research councils and the research community generally? What are the big criticisms of it?

Professor Nelson: I have not detected any big criticisms. There has been a bit of nervousness in the community about the status of the councils going forward, how they would sit underneath Research UK and what authority they would have. Currently, we have very strong governance arrangements. The councils are corporate bodies, and as such

are very effective bodies. I see that first hand in my own council, EPSRC, where we have a very high-quality council that gets really engaged in our business. It is way beyond just a science advisory board, as it were. They take an interest in our governance, audit, assurance and all those good things. Making sure that public funds are wisely spent is a very important function of the current councils. Some of the community are nervous that that might get diluted in some way, and we share that nervousness. Broadly, we are waiting to see what comes from the consultation. We will see what the community has to say in the middle of January when the consultation closes. We have detected some nervousness in some quarters.

Q47 Carol Monaghan: Mr Sweeney, as well as the Nurse review we have had the higher education Green Paper, which looks to change the science landscape by taking away HEFCE's involvement in funding decisions. Do you envisage that there could be problems or advantages in that?

David Sweeney: The Green Paper proposes one thing on teaching. It asks under consultation whether the funding for teaching should go into the Department to be done directly by Government, or whether it should remain with a non-departmental body, perhaps the Office for Students. It is for those responding to the consultation to indicate whether they think it a wise idea that teaching funding be directed from a ministerial office. Currently, the Further and Higher Education Act does not allow the Minister to instruct us on disciplines or institutions. It may be that some feel that the right place for that decision is in government, like the allocation between research councils that sits with the Minister currently, not with scientists; others might feel that it is a decision best made by experts, as it is now.

The Office for Students has to place students at its heart, but as with other regulators—Ofgem, Ofwat—the providers are very important, all the more so in higher education because of the degree of public funding that still goes into higher education. That matters on the research side, because we are very concerned about the sustainability of our research institutions, and that we do not drive our limited amount of research funding too hard. Currently, we have a lot of data quite naturally in HEFCE—and I think quite naturally in the Office for Students—which looks at the sustainability of institutions. It collects the very data Sir Paul talked about; it collates and analyses the data and shares it with partners. There is an assurance that public money is being spent effectively. They are important factors that will naturally come within the Office for Students and with which Research UK will have to interact.

Moving the policy people from HEFCE into Research UK does not deal with the fact that the core support function for institutions will lie somewhere else, so that is one of Sir Paul's details that requires attention. There is a risk around that. There needs to be protection so that we ensure that universities are delivering on national priorities as well as the priorities of their partners. Many of the Government priorities include research but are intimately connected with business, place, culture and the economy. Only by looking at universities in the round can you get the best benefit from them. Looking at research projects alone does not cover you in that regard. The proposal that HEFCE research should move comes with a number of issues that need to be investigated, and a clear decision should be made about whether it is best to manage institutional funding in an institutional

framework or whether it is best handled in an overarching research framework, which definitely has a narrower set of objectives than we have for universities.

Q48 Carol Monaghan: Do you think there is a threat to blue-skies research in this?

David Sweeney: No, I do not think so. It is important that both sides of the dual support system fund research that is new and driven partly by the bright ideas that academics have and partly by their partners. Sir Paul talked about the university-business interaction. Only a fraction of that happens through Innovate UK. They have an important role because they are business-led, but by far the most university business partnerships happen through universities themselves, without Innovate UK funding. Only 16% of Innovate UK funding goes into the research base. About 40% of their projects have an academic input, but there is a far higher number of direct relationships between universities and businesses that put the people who have issues directly in touch with the academics and universities that can solve them. Business partnerships with universities often lead to the co-location of research staff from business in universities. Unilever in Liverpool is a great example; there are also examples in Manchester. There is a rounded view.

Q49 Carol Monaghan: I visited the Fraunhofer at Strathclyde University the other day, which is a fabulous example of that sort of thing going on. I wonder whether we need to be looking at more of those things.

David Sweeney: I think that is what is happening. Research partnership funding has enabled universities to leverage a lot of private money. It is more difficult for research councils to leverage private money than it is for universities, which can build sustaining relationships from a stable university environment. You are right, but universities are key to that. Encouraging universities to do the blue-skies work that will be the seed corn for the future but also to understand the problems of their business partners and tackling those in a joint way are both required.

Q50 Carol Monaghan: Professor Nelson, what do you see as the benefits of Research UK taking on block grant allocation, which is currently performed by HEFCE? Do you think safeguards have to be put in place to ensure that dual support continues within a single funding model?

Professor Nelson: Certainly some safeguards need to be put in place. I am no expert on how one does this, but it would be essential to do it. We have made that clear in the past. It is a very important feature of any new way of tackling this. The advantages are about potentially getting better joined-up strategy, although it has to be said that we already do an awful lot of communicating, for example around HEFCE's RPIF investments. They always consult us. We find out what is being proposed, comment on it and send it back to HEFCE. It is not as if that does not happen now.

When it comes to REF impact case studies, I take issue with Sir Paul—only a single issue—over what he was talking about previously. I believe the impact process is a very helpful one, perhaps because I come from a different end of the spectrum. My background is in engineering, and we work closely with industry. The impact case studies produced in

the last REF were an immensely valuable source of information for us. My council interrogated those and, essentially, got evidence to suggest that £1 in gives you £10 out—that is broadly it. We already work very closely on that. There are a number of things we do already that perhaps are under the radar and are not made that explicit. Obviously, we would do more of that if the research part of HEFCE were put into RUK.

David Sweeney: There is a slight complication, in that we are England-only, although we work with the other funding bodies on the REF. In terms of our QR—our block grant allocations—they are England-only. You can do strategic initiatives that bring the two together in England; you cannot do them readily in the other nations.

Q51 Carol Monaghan: That leads me to the next thing I want to ask about. There are some concerns that HEFCE moves into Research UK, but the devolved Administrations continue to have their own HE funding. What do you see as the potential problems with that?

David Sweeney: We talk a lot with our fellow funding bodies in the other nations, but the decisions are influenced by the devolved Governments. There is a very limited extent to which we can harmonise. Essentially, there is not a terribly joined-up position, because we decided to devolve that function, whereas we retain project funding as something that goes across all the nations.

In terms of advice about dual support, currently the decisions about dual support are ministerial. I suspect that decisions about the allocation across both sides of dual support, with the safeguards you refer to, are likely to remain ministerial. The advantage at the moment is that the Minister gets advice from people who understand project funding and from people who understand block grant funding. He gets multiple sets of advice. Once you put everything into Research UK and it has to provide one piece of advice, it becomes trickier to tease out all the issues around the balance between the two sides.

Q52 Carol Monaghan: For people in devolved Administrations, if this overarching body affects funding, it would be a major concern for institutions within devolved areas.

David Sweeney: Yes.

Q53 Chair: Mr Sweeney, you have been very eloquent on the point about universities being some of our finest research institutions. I am very sensitive to that, coming from my constituency. Your concern about some of the proposals in the Green Paper about splitting teaching funding from research funding is starting to show. You have not said outright that you are opposed to it but that it will have to be done very carefully. In what kind of careful way do you imagine it could be done that would not undermine the quality of our research-intensive universities?

David Sweeney: It is not just our research-intensive universities we should be worried about. Currently, we are trying to increase STEM provision all over the country. We have great initiatives in Chester and Lincoln, very much tied in with local business, which requires STEM graduates. In order to attract the staff who will teach those subjects there have to be opportunities to do research. To deliver the national priority of more STEM

teaching, you have to look at teaching and research together. For many of our projects, you can invest only because there is a benefit for students, yet the relationship with the employer depends on the knowledge that universities bring. I do not know how you put safeguards in there without duplicating a lot of the work in Research UK that goes on in what I suspect will be the Office for Students. The institutional engagement that understands the particular issues universities have will be carried out naturally in the Office for Students, because that is part of the responsibility we envisage it having. Duplicating that in Research UK, where institutional engagement is only with the research-intensives that are delivering the project funding that brings us great results, is also an issue to be teased out and analysed.

Q54 Chair: Mr Sweeney, you are among friends. You can be honest. Do you think it is a bad idea to start with?

David Sweeney: I cannot say it is a bad idea to start with, because we have not yet teased out all the issues. I am presenting to you what I think are the concerns, which I hope people responding to the consultation will consider. They are not in the Green Paper or in Sir Paul's report, because he did not take evidence on it; it was out of scope. As he said, he came to it late and put it out as an option. What is clearly a good idea is the greater communication that Sir Paul envisages, and the way he constructs the Research UK overarching body to ensure—I would like to think—that not just the Higher Education Funding Council for England but the devolved funding authorities are tied in to provide exactly the sort of co-ordination that you think may be lacking.

Q55 Dr Mathias: Mr Sweeney, can I ask about the Government's review of the research excellence framework? Do you think your council will be involved in that?

David Sweeney: We have gathered loads and loads of evidence, some of it commissioned independently and already published, some not yet published. We have prepared a lot of material internally, and all of that will be available to the Government in the review of the REF. We take very seriously the need to cut bureaucracy and burden, which many have referred to, but—

Q56 Dr Mathias: Do you think there is much scope for that?

David Sweeney: That is up to the universities. Ninety-five per cent of the cost of the REF is incurred in universities, not directly hitting the public purse, although of course universities get a lot of public funding. We have done some work with the Government—not yet published—that shows very different amounts of spend from one university to another, and no great correlation between the spend and results. It is important that we do not impose a framework on universities that insists on them making that spend, but the work we have done shows that their own research management procedures are heavily tied up with the REF. It may be that some of that expenditure would be required whether or not there was a REF, and that some universities would, as I think the Government implied in the Green Paper, over-engineer their research management. To be fair, it is their choice to do so. We cannot have the best universities in the world, as we do, without relying on those university managements to decide how to drive good performance in their

institutions. We do not own the research excellence framework. For a start, it is a joint funding body arrangement between the four devolved nations and, secondly, all we do is interpret some challenges the Government make around allocating money, and then build a system driven by the views of academics. When we designed impact, we engaged thousands of academics in giving us advice about how it should be arranged. If they want to simplify it, we can simplify it.

Q57 Dr Mathias: Do you think the impact statements can be improved?

David Sweeney: They can be improved, although I do not quite see what Sir Paul saw. Only about 10% of our academics are involved in delivering impact case studies; 90% are free to do other things, so this is not an enormous challenge to every academic. Nevertheless, it is a call to make clear what the benefit to society from the research is. We can simplify. Had we just been moving forward in the normal way, we would have published a consultation that looked particularly at staff selectivity, which is one of the most costly elements in the REF, at the number of panels, at collaboration and so on. I am sure that the Minister's review will look at all those things, and we will be delighted to provide all the material we have.

Q58 Dr Mathias: Professor Nelson, do you see any shift in funding into applied research compared with non-applied research based on these kinds of impact statements?

Professor Nelson: I do not think so. We debated this very issue at the Engineering and Physical Sciences Research Council meeting last week. We always try to strike a balance between what Sir Paul calls translational research, which is challenge led, and research where the questions are set by the researchers and comes bottom up. We had a roughly 60:40 rule in operation where about 40% is challenge-led and 60% is bottom-up. Our council debated this at some length and concluded that it was probably in about the right place. If anything, the conclusion was that we would move it slightly more to bottom-up than top-down, but we constantly debate these things in research councils because it is essential that we get those balances right. I do not think we see any drift towards the applied end, certainly not from our point of view. The REF has been very good at helping academics articulate the great work they have done. Some great stories have come out to show the value of what both HEFCE and the research councils do.

David Sweeney: Evidence-based material, Philip, not stories.

Professor Nelson: I am terribly sorry, David; you are quite right.

Q59 Dr Mathias: Does the current research excellence framework help the idea of mapping the research landscape?

Professor Nelson: Yes.

David Sweeney: It is quite a rich set of evidence, but Sir Paul is right: it is not all the evidence.

Professor Nelson: It is incomplete.

David Sweeney: We have been working with Innovate UK on the SME environment and with research councils on the broader research framework. Our analysts talk to their analysts. I take Sir Paul's point about the need for ownership. In fact, the chief executive of ESRC, Jane Elliott, has chaired a group that is trying to provide exactly that co-ordination. There may already be a lot going on to keep Sir Paul happy, and if greater clarity is required about responsibility that is fair enough.

Professor Nelson: We are on the case, and we are working on it as we speak.

Q60 Chair: There was a reference in Sir Paul's report to the link between the work you are doing, the REF and the science and innovation audits. Are you concerned about duplication and increased bureaucracy in this area rather than reducing it? What needs to be done to make sure that bureaucracy is being reduced to help decisions, rather than just keeping everybody occupied mapping things?

Professor Nelson: The science and innovation audits are being run from BIS. I attended recently the meeting chaired by Jane Elliott, to which David just referred. The process of what is happening with the science and innovation audits was made clear to the meeting so that we could avoid any sort of duplication of that activity. It is important we do so. It is probably more about the longer-term mapping of the total landscape from the research point of view. The science and innovation audits have a different sort of flavour in trying to understand not just the research element but the potential for local economic growth as a consequence of that. It is a slightly different question.

David Sweeney: We are very interested in them. We have 133 universities, many of which are firmly embedded in their place, even though they also have national and global roles. We want to ensure we understand best the challenges in each area, but we also recognise that, if you are working in the south-west and need advice on graphene, perhaps you might have to go to Manchester to get it. It is not as simple as geography being the answer. We hope the audits will help tease that out, and in particular help us in how to support universities in making better contacts with business, particularly SMEs. That is a fruitful way in which we and Innovate UK can work well together, and have done so already.

Q61 Chair: This takes us into the sensitive area of Government policy on place in the economy. Sir Paul's report makes it clear that part of the purpose of having more mapping going on and more data held by Research UK is so that more strategic decisions can be made about funding and place, while still not compromising excellence, which is quite a high bar. He also says that this cannot be delivered at arm's length, so that puts it firmly in the lap of Research UK, which I think is what he is after. What do you think about this, Professor Nelson? Are you ready for that?

Professor Nelson: This is an important issue. Obviously, the commitment to excellence in the research councils must be paramount. There is no question about that. It goes back to the welcome growth we are seeing in research funding. One would like to think one could build more research capacity around the country, as a sort of supplementary exercise to that which already goes on in terms of funding excellent work. Building on excellence in different regions is arguably a sensible thing to do, provided one runs a suitable, competitive, open and transparent process for doing so. That is not ruled out. Research UK

could take a view on how that sort of thing might be managed in the future. We are not saying we do not want to engage on the issue, which is an important one, but we have to think very carefully about how these things are managed, and that excellence and capacity are built in that regard.

David Sweeney: We do not want to fall into the trap of thinking that everything is channelled down through Research UK. Other funding sources are available. Much of European funding is inherently regional, in that it is allocated through our local enterprise partnership links. Our businesses are very often firmly fixed in their location. Liverpool has a great link with Unilever because of the work it does in the north-west. We have to take into account place; that is why we have universities all over the country. Indeed, it must be firmly built on excellence, and our research excellence framework does that. We are entirely at one with research councils on that, but there is a bit more to life than just excellence, particularly when you are looking at other funders. We have to accommodate the priorities of those other funders.

Q62 Chair: You have taken me to my final question. Sir Paul was very clear that he thought political considerations needed to be taken into account, which I know many in the research community find uncomfortable, but it would be naive to imagine that placing responsibility for strategic decisions with Research UK and creating a ministerial committee, in which Research UK was very well embedded, would not create political pressures. How do you react to that potential reality looming on the horizon, Professor Nelson?

Professor Nelson: Sir Paul answered it perfectly earlier and I repeat what he said. It is an inevitability; let's recognise that and manage it. The 2010 version of the Haldane principle makes it very clear that there are some issues that are legitimately in the province of Ministers, perhaps some of the bigger decisions. Let us make sure that they are made openly and transparently, so that we all understand how a decision is being made, what the drivers are, what the criteria are and all those sorts of things. It would allay a lot of the fears of the research community if such a device were enabled in some way.

David Sweeney: Under the current legislation we are protected, because the Government cannot give us instructions on those matters, but taking advice from Research UK would inform the usually independent panels that take our project-based decisions, and what Sir Paul outlines is a perfectly reasonable way through that.

Q63 Chair: Do you both share Sir Paul's view that minutes from any ministerial committee should be published?

Professor Nelson: Openness is a good thing as a matter of principle. I would be very happy to follow Sir Paul's lead on that, frankly.

David Sweeney: I do not think it is for non-departmental bodies to tell Ministers how to run their meetings, but we all believe in openness.

Chair: That is a very diplomatic close to our session today. I thank both of you for the time you have taken to come today and for your very thorough answers. We have a long road to travel on these proposals; we are still in consultation on some of them, so I suspect we will be

discussing them again at some point. All that remains is for me to wish you and Sir Paul, who is still in the audience, a very merry Christmas and all the best for 2016.