HOUSE OF COMMONS

Science and Technology Committee

Oral evidence: Work of the Department for Education Chief Scientific Adviser, HC 640

Monday 10 November 2014

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Watch the meeting

Members present: Andrew Miller (Chair); Jim Dowd; Stephen Mosley; Pamela Nash

Questions 1-81

Witness: **Dr Tim Leunig**, Chief Scientific Adviser, Department for Education, gave evidence.

Q1 Chair: Can I welcome you here? No doubt we will see you a few times in the remaining part of the Parliament, but it would be helpful for the record, as it is your first time here, if you would be kind enough to introduce yourself.

Dr Leunig: I am happy to do that. As you say, it is my first time in front of this Committee. I am deeply grateful to you for inviting me here. Democracy is much more than just elections—it is about holding the Executive to account. Therefore, as a representative of that, I am delighted to be here. I am Tim Leunig. I am associate professor of economic history at the London School of Economics. I am chief analyst at the DFE and chief scientific adviser at the DFE. It is in that last role that you have invited me here today.

Q2 Chair: How would you describe your responsibilities as CSA?

Dr Leunig: They have two elements. First, there is a responsibility to the Department. That, in turn, has a number of components. Secondly, there is a responsibility to Sir Mark and the wider network. My line manager is Chris Wormald, the permanent secretary, but I have dotted-line responsibilities to Sir Mark. With my departmental hat on, I cover a bunch of traditional scientific-y issues, such as asbestos in schools or when schools should shut if Ebola becomes prevalent in Britain; thankfully, that does not look likely at the moment. In the responsibilities to Sir Mark, I attend a lot of meetings. At some of them, I have something substantial to add. At some discussions—for example, on acidification of oceans—it has to be said that I am more likely than other people around the table to be silent.

Q3 Chair: There is a lot of knowledge among schoolchildren on that subject, but there you are. We heard in the previous session that you are also chief analyst.

Dr Leunig: I am indeed.

Q4 Chair: For a time you were also a senior ministerial policy adviser. What are or were those other two roles?

Dr Leunig: I am chief analyst, which is a well-known position in the civil service. That is a job share with a woman called Donna Ward, who has come to us from DWP. We applied as a job share and do the chief analyst's job as a job share. When the job of chief analyst was advertised, there was a piece in the advert saying, "If you would like to be the chief scientific adviser, please say in your application." I very much wanted to do that, so I ticked the box, so to speak. I have worked for GO-Science in the past, so I am not an education civil servant who has been made the chief scientific adviser and imposed on GO-Science—I am someone who has worked for GO-Science in the past and then went into DFE.

As chief analyst, I am responsible for the full range of things chief analysts are responsible for. I have 260 badged analysts in total. I am not their line manager. They are bedded out into policy teams—that is the way we work in DFE—but ultimately, at an intellectual level, those people report to me. I have discussions with them frequently. The heads of profession of statistics, economics, OR and social research all have responsibilities to me as head of the analytical community.

Q5 Chair: Does that include the departmental science and engineering staff?

Dr Leunig: We do not really have one of those in DFE. We are not a Department like DECC or DEFRA where there is clearly a core scientific body that directly informs specific policy questions. We do not have a scientific group as such. I do not think we ever have—certainly not in recent years.

Q6 Chair: We may come back to that later. How many times have you met the chief scientists in your role?

Dr Leunig: Sir Mark's network?

Chair: Yes.

Dr Leunig: I could go away and count it, but I see them frequently. I will next see them tomorrow. Every couple of weeks would be a typical gestation. Tomorrow we are discussing ageing, for example.

Q7 Chair: Going back the other way, how frequently do you meet the heads of profession in DFE?

Dr Leunig: Week in, week out.

Q8 Stephen Mosley: As the departmental chief analyst on a job share, presumably you are responsible for formulating policy.

Dr Leunig: Well, Ministers formulate policy. Chief analysts, like all civil servants, advise Ministers. As Mark said earlier, it is truth to power.

Q9 Stephen Mosley: That is a very civil servant response.

Dr Leunig: It is true, though. I do not get to formulate policy. It is not for me to do that. You guys, above all, should be pleased about that. We live in a democratic—

Q10 Chair: You offer policy options.

Dr Leunig: I offer policy options. Yes, absolutely. That is my job.

Q11 Stephen Mosley: As chief scientific adviser to the Department, you are also meant to provide independent scientific challenge to those policies. How do you balance that?

Dr Leunig: I have never found that there is any conflict. Take asbestos, for example. There is asbestos in schools. On that, I have liaised a number of times with my opposite number in the Health and Safety Executive. I cannot imagine for a moment that I would have advice different from the best scientific advice on the question, "When should we get rid of asbestos?"

The most common piece of asbestos in schools is the panel to which the electricity meter is bolted. The reason that it is the most common is, first, that that was the standard use of asbestos in the last 50 years and, secondly, that it is quite hard to remove that piece. The CSA's advice is, "Don't touch it," because asbestos is problematic only if the dust begins to crumble and you can breathe it in. This piece of asbestos is almost always painted; it is in a small, sealed box and is in the middle of the building; it is not somewhere children would ever go. The scientific advice from HSE is that it should be maintained, be looked at and have a plan, but that we should not, for goodness' sake, take it out. I cannot imagine any world where I as a chief analyst would have any advice other than, "This is what the HSE says. It is clearly the leader in asbestos. We should, therefore, follow its advice."

Q12 Stephen Mosley: You have taken one example. I am sure that later we will come on to other examples where there might be a bit more discrepancy between the scientific advice and what is being advised from a policy point of view. Turning back to you, before you worked for the Department, you were politically active and worked for a think-tank chaired by the Minister of State for Schools. Given that background, do you think it is realistic that you will be seen as an independent source of advice?

Dr Leunig: I hope so. I have written widely on any number of issues of public policy over the years. I have been employed by a number of Government Departments, and not for any party political connections. I worked on the Eddington review of transport and the economy. I have worked for the Foresight unit twice, on housing and then on

manufacturing. Those people hired me because they thought I had something useful to say that was independent and that Government would want to listen to. I have given seminars in BIS, the National Audit Office, the Department for Transport and so on. Some time ago I appeared in front of Gwyneth Dunwoody, in a room somewhat like this one, as an independent expert on the future of the railways. So, yes, I think there is a set of people who have been interested in what I had to say, and certainly not for any party political allegiance that I have had.

Q13 Stephen Mosley: You mentioned the wide range of skills that you have and the challenges with which you have been involved in the past. I understand that your background is mainly in economic history. Why do you think that qualifies you to provide scientific advice on education policy?

Dr Leunig: Because I am a scientist. My PhD is in economics. Science is about taking a hypothesis and testing it rigorously against the evidence. That is what I do as an economic historian. I teach at the LSE. We are fairly distinctive in that we have a BSc and an MSc, not a BA and an MA, in economic history. We have a separate international history department that has a BA and an MA, but in my department we are very clear that we are part of the scientific community.

I understand that Sir Mark was given all the applicants for the job of chief analyst and was asked to tick those who he felt would be a good chief scientific adviser. He put a tick next to my name. I work well with him. He is a pretty forthright person. It is fair to say that, if he did not think I was up to the job, he would be perfectly happy to tell Chris Wormald that I was not.

Q14 Pamela Nash: Could you clarify the practical, everyday circumstances you are working in? How many days a week are you dedicating to this role at the moment?

Dr Leunig: To the specific role of CSA?

Pamela Nash: Yes.

Dr Leunig: It varies week by week. Sometimes it will be a large number. Ebola is one issue where as chief scientific adviser I sit in on all the DFE meetings; I get the briefings from Cobra and so on. That can take a fair chunk of time.

Q15 Pamela Nash: To be clear, do you not have a contracted number of hours or days that you work?

Dr Leunig: No. I have an aggregate number, as chief analyst and as chief scientific adviser, which I think was also true for my predecessor.

Q16 Pamela Nash: Do those add up to a full-time role?

Dr Leunig: No, because I am part time. I am a job share. I am also part time at the London School of Economics. Broadly speaking, I work Monday, Tuesday and most of Thursday

in DFE. Then I work Wednesday, Friday and a bit of Thursday at the LSE. Obviously the days vary according to the meetings in my diary.

Q17 Pamela Nash: So far, do you feel that that is adequate for the role? Is that working?

Dr Leunig: Yes, I think so. To be absolutely open with you, the CSA role has proven more interesting and more time consuming than I had expected. When I began, I thought that there would be a lot of very technical, traditional hard-science discussions that might well go over my head, but what is really noticeable about the chief scientific advisers' network is that it is a bunch of people from a variety of backgrounds who are interested in what science means for the society we live in. That is the sort of thing I am perfectly capable of playing a part in and where I bring something different from the other people around the table.

In particular, as a social scientist, I am someone who has researched and studied the power of incentives. That is a useful thing to be able to add to the table—how do people typically respond to this, that or t'other and how, therefore, can we solve the problem that is on the table? That is why Sir Mark was very keen to have social scientists involved in the chief scientific advisers' network. He does not see it as a natural science network—he sees it as science in a broader format.

Q18 Pamela Nash: I am also interested in what support you have in different ways within the Department. Can you tell us what staff you have at the moment?

Dr Leunig: I am also head of the strategic analysis and research division—SARD—which is a small analytical division—

Q19 Pamela Nash: This may be relevant, but in terms of your role as chief scientific officer—

Dr Leunig: Hang on. It does all of my practical work, whether I am doing it as chief analyst or as chief scientific adviser—the real nitty-gritty of life, such as printing out of papers. I was sent this very nice picture of you all so that I would be able to recognise you—there you all are.

Q20 Pamela Nash: I am sure mine is very different.

Dr Leunig: Indeed—your hair has changed colour from this one. Sitting over there, I could not see your name and thought, "Darn, who is that?" When you were called by the Chair by name, I thought, "Thank heavens," and was able to write a little number down by you. That is done by my core staff. They are not assigned to me specifically as chief scientific adviser.

Behind me and to my right is the wonderfully named Conor O'Connor. The two "Conors" are even spelled differently, for added confusion. He also works in our international division and is supporting me on explicitly CSA issues. He liaises with the CSA network and ensures that I have all the papers and am aware of the issues. Where Sir Mark is

particularly interested in my being at a meeting in advance, if there is a diary clash, one of his jobs is to try to sort that out. Obviously it depends on who the diary clash is with. At one point, my previous meeting with you was going to be at the same time as a CSA meeting. I had the ultimate excuse for not making a CSA meeting, which was appearing in front of you. Sometimes these things are inevitable, but otherwise Conor sorts them out.

Q21 Pamela Nash: I understand. To be clear, that is primarily an administrative support piece of work.

Dr Leunig: Yes.

Q22 Pamela Nash: I take it from your answer that there is not an assistant CSA or a deputy CSA.

Dr Leunig: We have a deputy CSA, Simon Palmer. It has always been the case that that is the deputy head of SARD—the deputy director. That is a Department convention. However, so far I have done it all myself because I find it interesting and, therefore, Simon has not had much of a look-in.

Q23 Pamela Nash: That is a role for him in addition to his everyday job.

Dr Leunig: Absolutely.

Q24 Pamela Nash: So that has not been activated.

Dr Leunig: No, it has not, to be honest. He has been told that this is his job—that if I get run over by a bus it will be for him to step into the breach—but that, basically, I have no attention of relinquishing any of it.

Q25 Pamela Nash: If you don't get run over by a bus—and I hope you don't—but you may get overrun by work, it is part of his role to take on some of that work for you. Is that right?

Dr Leunig: It would be, but my job is really to sort out my work load to make it work within the hours I have to play with. I am sorry; "play with" is the wrong phrase, but you know what I mean. That is my job. That is the job of all of us. If I gave all of you another 24 hours in the day, you could fill it perfectly well with good work.

Q26 Jim Dowd: Work, anyway.

Dr Leunig: Yes. My job is to ensure that the CSA role does not get squeezed out. Sir Mark is a pretty forceful kind of guy. He will not let me treat this just as a line on my CV, rather than anything else. As I say, the work has been genuinely interesting and, therefore, I have done more of it than I had expected.

Q27 Pamela Nash: In terms of advisory support, it is our understanding that the Department does not currently have a scientific advisory committee or council.

Dr Leunig: No.

Q28 Pamela Nash: So that is the case. Do you think that is the right decision?

Dr Leunig: Yes.

Q29 Pamela Nash: Can I ask why?

Dr Leunig: Because the range of things that I cover as CSA is so broad that I cannot think of a single committee that would make sense. I came to your last session on bench science in schools; I sat on the extremely uncomfortable wooden bench at the back. I tried to sit on the seat in front, but I was told that I was not allowed to sit there because I was not with a speaker; you are very classist on these things. Bench science is one thing. Ebola is another. Asbestos in schools is a third. Can I think of a committee that could cover all three of those equally—or teacher supply? No. I would rather see individual experts for all of those at different times, and to see any one of them.

Q30 Pamela Nash: To be clear, is that advice that you would seek from experts outside Government?

Dr Leunig: Yes, particularly given my background. I am not a career civil servant in the traditional sense, so I spend a lot of time talking to academics and similar people. Today I was at the Nuffield Foundation IFS event on teacher supply models. I spent two and a half to three hours listening to its research on different routes and the different benefits and costs of those things. I am really keen to engage with outsiders, whether they are science groups or the general analytical community.

Q31 Pamela Nash: Before we move on from this, is there any area in your role and combination of roles where you think time management and the support that you have could be improved on—and where you are seeking to improve?

Dr Leunig: As individuals, we can all improve. I would be delighted were I to have a better memory and were I not to dash from meeting to meeting in the way in which I all too often seem to do, but no—it is fine.

Q32 Jim Dowd: There is a right old stramash going on in the Chamber, as my colleague would readily recognise, so we may well get dragged away fairly shortly. In the meantime, you describe yourself as a social scientist, but you said that your qualification is in economics.

Dr Leunig: Yes.

Q33 Jim Dowd: Therefore you are a dismal scientist.

Dr Leunig: I will have to plead guilty to that one.

Q34 Jim Dowd: I want to look at your appointment as CSA and how you balance your role. When were you appointed?

Dr Leunig: I took up the post in March.

Q35 Jim Dowd: In March?

Dr Leunig: I was appointed, yes, in March—I believe.

Q36 Jim Dowd: But the Government Office for Science first listed you as chief scientific adviser for DFE in May.

Dr Leunig: You would have to ask them, but I believe that I was appointed at the end of March.

Q37 Jim Dowd: We can certainly do that. Was this through a competitive process?

Dr Leunig: It was. It was the standard civil service commissioners, etc., etc.

Q38 Jim Dowd: And the role was advertised.

Dr Leunig: The role was advertised. I believe that there were a lot of applicants; I think there were over a dozen. That was for the job of chief analyst.

Q39 Jim Dowd: Sure, but you were also appointed as chief scientific adviser. Was that implicit in the job as advertised?

Dr Leunig: The job as advertised was the job of chief analyst. It said, "If you want to be chief scientific adviser, let us know." I believe they decided that, if the successful chief analyst was not suited to being chief scientific adviser, they would subsequently appoint a chief scientific adviser as a separate person.

Q40 Jim Dowd: So your role as chief analyst is permanent but part time.

Dr Leunig: Yes.

Q41 Jim Dowd: What about your role as chief scientific adviser?

Dr Leunig: It is permanent and part time as well. However, I have made very clear to Sir Mark that if on any single day he decides he wants someone else for the role, either because he thinks I am useless or he just thinks that a different bunch of skills are needed, I will stand down with immediate effect. I think that is the only way to do these jobs.

Q42 Jim Dowd: You said that your role as CSA is a job share.

Dr Leunig: No. My role as chief analyst is a job share. My role as CSA is solo. Sorry, I was not clear about that.

Q43 Jim Dowd: So you offer the Department your learned advice on policy.

Dr Leunig: Yes.

Q44 Jim Dowd: How did the job share come about? Was Ms Ward already in a part-time post?

Dr Leunig: No. Donna was in a full-time post as a deputy director at the Department for Work and Pensions. I knew her because she was the lead analyst on child poverty, which is a joint DFE-DWP area. I was extremely impressed with her. Oliver Letwin said of the child poverty evidence base that it was the single best thing that he had seen in any of his periods in government. That is not a trivial thing to say. I thought, "Wow. That is somebody I would like to work with more closely."

Q45 Jim Dowd: That depends on what weight you give to Oliver Letwin's judgment, doesn't it?

Dr Leunig: I would be happy to take any of you seriously if you say, "This is the best evidence document I have seen in my time in government." I would take any of you seriously on that. So I thought Donna Ward is somebody I would like to get to know better.

Q46 Jim Dowd: As long as you didn't find it in a bin in St James's park you would be all right.

Dr Leunig: I do not believe that that evidence document has ever been found in a bin. I thought that Donna Ward was somebody I would genuinely like to work with more closely. Then the job of chief analyst came up. A colleague suggested to her that she should apply for it, as it would be a promotion for her. It turned out that she wanted to work part time because she has young children. I was also thinking about applying for the job, but I did not want to end my academic career—I enjoy my academic work—and thought that I would like to do it part time. I am part time in a more unusual way. Most people who are part time in the civil service are part time because they wish to work part time in total.

Q47 Jim Dowd: Do you do it as two discrete functions?

Dr Leunig: Yes. She and I had a conversation and decided to apply for the job jointly, which gave the Department the ability to appoint us jointly, as a pair, or to offer the job to one or other of us. It offered it to us jointly.

Q48 Jim Dowd: When you offer your conclusions or recommendations, clearly they cannot come individually—they have to come jointly.

Dr Leunig: No, they do come individually. Most job shares are Monday to Wednesday and Wednesday to Friday; those recommendations usually come jointly. In our case, we have split up the different elements of the job, so either Donna or I lead on any given element. Thus we make the recommendations in our own name.

Q49 Jim Dowd: Right, okay; I will ponder upon that.

Dr Leunig: That is fair. It is an unusual thing.

Q50 Chair: Earlier you mentioned sitting in on the hard bench at the back and you listened to an evidence-based session, which was preceded by a brainstorming session with some substantial expertise in the field of science education. You have inherited an area where there is a significant degree of dispute.

Dr Leunig: Absolutely.

Q51 Chair: It is quite clear that Ofqual, led by a lawyer, is out of kilter with the vast majority of leading scientific institutions on the issue of science practicals. Are you going to listen to the scientists and try to encourage a move towards one of the solutions that were discussed in our session?

Dr Leunig: There are two distinct issues. First, there is the way in which the decision is made. Secondly, there is the actual decision. One can be right and the other can be wrong in either direction. It is right that Ofqual, rather than the Department, makes the decision as to how we run exams, because that is its expertise. The Ofqual compendium on examinations is about that thick—it gave me a copy. I am sure that it would be happy to give you one; I can tell you that it is a right riveting read. These are serious experts who understand examinations.

The second issue is the substance of the decision. I remember way back when—30 years ago—burning magnesium in oxygen. I suspect that all of you can remember doing the same thing. It is the only thing I can remember from chemistry O-level. You put the magnesium in a test tube, on a clamp, and burn it. You try to get MgO, because that is the correct result. You have always looked up the result first, because that is the sensible thing to do as a kid. I never got anywhere near it; I think I was on Mg_3O. What I really learned then was that experiments are hard. You get that only from doing proper bench science. Bench science is critical. Universities tell us all the time that they want lots of bench science in schools.

Q52 Chair: And it has to be measured, the universities say.

Dr Leunig: So they say.

Q53 Chair: No—not so they say. That is their strong opinion.

Dr Leunig: I am sorry. Let me be clear—yes, they say that. I am not disputing that universities overwhelmingly say that. What we are concerned about in DFE—and what Ofqual is concerned about—is whether there is a practical way of assessing it, particularly at GCSE level, that will be fair across kids and will allow a decent level of ambition. We have to make sure that this test is accessible to children in every school in the country, including people in pupil referral units, where the science facilities tend to be pretty marginal. Let us be honest—PRUs are tiny, in the main. That is not likely to change.

Q54 Chair: But when the head of Ofqual was sitting there, basically she said that it was because teachers cheat; I paraphrase slightly. That was the clear message. There was no means of making sure that the integrity of the system was maintained. There is a conflict with the pressures of getting a good place in the league tables, isn't there, versus—

Dr Leunig: Absolutely.

Q55 Chair: We understand that. In the evidence session you listened to, you heard a number of different experts suggesting different alternatives. Let me throw one to you. I still have a large chip on my shoulder because, before I went to the LSE, I failed the 11-plus. It does not stop you going to the LSE, I guess.

Dr Leunig: I think you have redeemed it since then. Your LSE degree accounts for far more than that.

Q56 Chair: In the certificate of secondary education, which was intended to test people's more practical skills, a practical work-around was devised.

Dr Leunig: It was.

Q57 Chair: Schools were created in clusters. One school moved its invigilators to another, and so on. That went up through a tier system, regulating, and worked brilliantly. There was a fair system. For goodness' sake, the idea that there is not an alternative is just fundamentally wrong. We heard several different ones. I have just given you another.

Dr Leunig: Let me take issue with two of the things you have said. First, you said that it was a fair system. It is true that, looking back, we perceive it to have been fair, but the evidence in either direction as to whether it was or was not fair is now quite hard to ascertain. Since you took those exams, I can deduce that you were born in 1971 or earlier, because that was the last year for CSEs.

Q58 Chair: Slightly earlier.

Dr Leunig: Even if you were born in 1971, it would be pretty hard for us now to go back and work out whether the CSEs that you took were fair and whether the standards were

effectively moderated, not so much within an area as across areas. Although I respectfully hear what you are saying, it is not something that I would accept as proven.

Q59 Chair: But Ofqual did not even look at that as an option.

Dr Leunig: That is a question that you will have to pose to Glenys.

Q60 Chair: You argued the case that, as a social scientist, you have an important contribution to make.

Dr Leunig: Absolutely.

Q61 Chair: We are not arguing with that. Social scientists have a significant role to play. However, in terms of understanding pure science and the measurement of people's competence to experiment in that, the overwhelming opinion is against what Ofqual is proposing. Why can't you convene an advisory committee of those people and come up with a methodology that solves the perceived problem from Ofqual, while at the same time meeting the needs of the science community? Why don't you do that?

Dr Leunig: The reason I do not do that is that that would be usurping Ofqual's independence. I would be very worried if civil servants or ministerial-led Departments usurped the authority of an independent body whose existence is there to protect the sector, frankly, from the whims of politicians. Much as I respect you all and my own Ministers, all politicians have views from time to time—

Q62 Chair: I am not expressing the views of politicians. I am expressing the views of scientists.

Dr Leunig: No, no, I get that.

Q63 Chair: I am talking about leading scientists in major disciplines.

Dr Leunig: I understand what you are doing, but once we have the DFE in Sanctuary Buildings overruling Ofqual we are opening a door that, as a chief scientific adviser, I would worry about opening. What I heard Glenys say, above all, was about the danger of dumbing down the curriculum in bench science when it is assessed. I remember John Holman saying to your Committee that the current system is not working well. However, because GCSEs have to be accessible in every school, however bad the science equipment, that is a problem.

Q64 Chair: You are repeating yourself. You heard Sir Mark talk about the circumstances when there are differences between chief scientists and their Ministers and their various areas of responsibility. One of the things that make the chief scientist function work is that, while it may be paid on a civil service grade, it is quite a different set of responsibilities. You are the

independent adviser. What is wrong with an independent adviser saying to Ofqual and to the Minister, "You have got it wrong"?

Dr Leunig: Nothing. If that is what I thought, that is what I would say.

Q65 Chair: So you do not agree with those scientists.

Dr Leunig: I have not said that either. I am a civil servant. It is wrong constitutionally for me to tell you the advice that I have given to Ministers. I have seen Sir John Holman. We had a one-on-one meeting, however many months ago it was, to talk about science in general. He is someone I see. If he wants to e-mail me and say, "I want to meet you again," I would definitely make time to see him; of course I would. He is a really serious person. The same is true of the other science bodies. Of course I would see them and will listen to them.

If they convince me that they are right, I will put that view forward fiercely. However, as Sir Mark said—whatever it is—an hour ago, this is an area where Ministers have a lot of discretion. There are a handful of things—he mentioned ash clouds and jet planes falling out of the sky—where you would have to be barking as a Minister to ignore the advice of your chief scientist, but on most issues there are lots of different things that a Minister will want to weigh. I would expect the chief scientific adviser's advice to be seen as important in this area—

Q66 Chair: I would have thought that, given that the Secretary of State for Education is responsible for the next generation, from whom we expect great things in terms of science and engineering, you would have to be barking not to listen to the chief scientist if the chief scientist said, "Minister, Ofqual has got it wrong." I do hope that you are taking cognisance of what you heard in the evidence session here.

Dr Leunig: That is why I came.

Q67 Chair: This was not a bunch of amateurs—they were serious players. You do accept that it is the overwhelming opinion of the science community.

Dr Leunig: I do accept it is the overwhelming opinion—absolutely.

Q68 Jim Dowd: You said that there is a constitutional disbarment from revealing your scientific advice. There is not—it is a convention.

Dr Leunig: It is.

Q69 Jim Dowd: It is a convention that was invented principally by Ministers to protect themselves so that they do not have to answer when they do not take advice that they are given.

On the ash cloud stuff—this is the main problem for those of us who are lay people in public administration—the advice to the German Government was completely the reverse. Are you

saying that the advice given by the German scientists—or whatever the equivalent of the chief scientific adviser is—is inferior to the advice that was given to the British Government, or vice versa? How do you advise Ministers or Members of Parliament—whoever it might be—who have to take decisions on these matters? How do they respond on an issue such as the Chair has outlined, where we get conflicting advice from so-called experts?

Dr Leunig: At some level, I would expect conflicting advice from experts. If experts agreed on it completely and utterly, it would be one of those questions we would all know the answer to and it would not really be going to Ministers.

Q70 Jim Dowd: But you said that about the asbestos board in schools.

Dr Leunig: Very much so. There are experts with different views on that, but the HSE's overwhelming—

Q71 Jim Dowd: That is not what you said at all.

Dr Leunig: The HSE's view—

Q72 Jim Dowd: You said that the universal opinion was that they should be left alone.

Dr Leunig: The HSE's view is that you should very much not. It has given me the evidence basis for that and has cited any number of academic studies. I have e-mailed academics working on asbestos about the role of asbestos specifically with respect to children, so that I can get a sense of whether I think the HSE is in the right place. I do think it is in the right place. If I did not, I would at least want a degree of humility—I am an economist, not a natural scientist, let alone an expert on lungs—and would at least want to listen to other scientists who disagreed with the HSE before going into bat to oppose it. However, if I really thought that it was wrong, I would do so. The studies that I read did not suggest that it was.

I have answered the second part of your question but have completely forgotten the first part, for which I apologise.

Q73 Jim Dowd: It was about the volcanic ash cloud. Why is it that perfectly respectable scientists can give completely contrary advice?

Dr Leunig: One thing that I have been interested to find out is just how international the CSA network is. It is a network of British scientists, but Sir Mark and GO-Science have good links to their opposite numbers in a number of different countries. One thing that we do take into account, particularly if we are planning for emergencies, is, if Britain thinks this and other countries think the reverse, would it be credible for Britain to say this? The US has quarantined people for Ebola. If every other country did the same thing and we did not, even if our scientists said, "This is absolutely the right thing to do," we would have to think about whether it would be credible for Britain to dissent from the international scientific consensus. That is something we would need to give advice to British Ministers on.

Q74 Jim Dowd: Are you saying that science is a democracy?

Dr Leunig: It is not a democracy; it is not a one person, one vote thing. There are clearly—

Q75 Jim Dowd: You have just said that we cannot do things differently, even if we believe them to be right.

Dr Leunig: No, I did not say that.

Q76 Jim Dowd: We can't do it differently from the way everybody else does it.

Dr Leunig: No, I definitely did not say that. I said that we would want to advise Ministers that our advice was different from the advice that they would get in other countries. On most issues, it is not. In the case of asbestos, we know that you do not want asbestos all over the place. In Australia they had asbestos in sandpits in one town, because it was the town where they mined asbestos.

Q77 Jim Dowd: That is right—they actually mine it.

Dr Leunig: Yes. The tailings were sold for sandpits. Everywhere in the world it is pretty clear that the scientific advice is that that is a no-no. There is not going to be any dispute on that.

Q78 Chair: We are expecting a vote any moment now, so I will try to wind things up at this stage. It seems to us that the vast majority of scientists accept our view on science education—as do the vast majority of chief scientists inside the Government, my unofficial soundings suggest. Rather than leave this to the strict practices that are there because of ancient history in this place, it would seem sensible if you were to seek to influence this debate. We will publish our views very shortly. We hope that you will take them seriously and try to get some common sense into the debate.

Dr Leunig: I certainly will. If you are willing to tell me quietly, on or off the record, the names of the chief scientists, or to urge those to whom you talked to e-mail me, I would be delighted to meet them.

Q79 Chair: Like you, I work on the basis that some conversations are privileged.

Dr Leunig: Yes, but if you want to urge them to e-mail me, they can spontaneously e-mail me to talk to me about it. I would be delighted, because no chief scientific adviser has raised this with me.

Q80 Chair: It is a matter that I know causes concern among some of your colleagues. On that point, thank you for your attendance this afternoon.

Dr Leunig: Not at all; thank you for inviting me.

Q81 Chair: We look forward to meeting you again during the course of our inquiries, especially on this latter issue.

Dr Leunig: Indeed; at any time.

Chair: Thank you very much for your attendance.