

Session 6: Issues involving science that we might communicate

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Science in its developing social contexts

Thank you very much, and thank you Peter for starting things off in this session, and I'll offer a few thoughts which I hope are complimentary or extend one or two of the issues that you have raised, and before I do, I would just say that I found it, having just been here today, I'm quite excited by the vigour and the energy that I feel in this science communication field now, it's changing, it's changing over time, and perhaps what I can offer will add to the way that you are thinking about your role.

Let me first make, just, and I obviously as you would expect, come at these things from a rather different angle to Peter, let me make three preliminary observations on the broader context of science at this point, the first decade of the 21<sup>st</sup> Century. Two are pretty obvious, one perhaps less so. The first, which is obvious, is that science and technology is re-shaping the world at an escalating pace. This is going to continue. The speed, the power, the pervasiveness of technological innovation is increasingly transformative, not just at a physical level, but at the level of our own identities, and is penetrating now, more and more widely and more and more diffusely and what is more, and I think this really needs underlining, is that most science, most scientists, most people working as scientists are working in the private sector. They are not Olympian figures in universities, and I think it's very, very important to focus that issue.

In the past of course, you know, technology has always transformed things. The car, you know, television, plastics, what have you, but now we are into this new era of the new genetics, potentially artificial intelligence, and as Peter Williams has said, nano-technology. So that's my first background point, the

sheet scale and pervasiveness of what we are embedded in and what we are dealing with here. And the corollary of that is the second observation, is that this very significance to all of our lives is going to bring with it more and more controversies and I think that was implicit in what Peter was saying as well, that alongside the celebration and the fascination, there is the potential for huge political and economic dislocations around science. We have seen if you like a fore taste with BSE with GM in the last two or three years, and we saw the (brew ha ha's) over MMR. The House of Lords Science and Technology Committee in the year 2000 talked about 'science's crisis of trust'. My suspicion is that this is by no means over.

And my third observation is in relation to these two developments, that there is a continuing absence of a shared, if you like, public language, an adequate public language, or adequate institutional frameworks in which we can engage adequately, collectively, with what is at stake for society in some of these mammoth technological developments that science is throwing up. And as I will argue, this is, I think, a deeper and more complex and troubling challenge than is often implied. Now, in the House of Lords Report in the year 2000 it was very critical of the deficit model of public understanding of science. The then dominant understanding that basically the public is ignorant and needs to be taught. And despite the fact that that point was raised as a serious problem by the House of Lords in that seminal report, and despite a number of very good initiatives, including the Royal Society current 'Science in Society' initiative, I think this model is still lurking, and lurking dangerously, of experts having to deal with an ignorant public, and the Prime Minister himself tosses terms like 'ladism' around rather too regularly for my liking.

So, looking forward it seems to me as a citizen that it's this issue as much as the celebration and the business of getting scientists to talk amongst themselves better,, that is going to be the key...'the' key issue facing science in the decade ahead, and the vital one for those reflecting on science communication, 'how to understand controversy', these controversies when

they emerge one can always see them after the event, one can begin to understand them. How to understand what is going on in controversy and contention over these matters. I was very interested what Alan said before about how the museums in the States, you know, this is not a pleasant subject to raise. There are not many people want controversy placed in front of them as a central issue, and the challenge is going to be how to take controversy, because controversy there will be, and channel it to encourage it and handle it constructively. And my experience on the Bio-technology Commission, which is the statutory advisory commission, the strategic advisory body in the agriculture and environment sphere, suggests that there is a hell of a long way to go, and I will come to that in a moment. So it's not surprising, given...and I stress this, given the unprecedented significance, and omnipresence of science and technology as a shaper of the contemporary world, or the contemporary existences, you know, the patterns of life that we now have, in a globalising world, it's not surprising, indeed it's eminently right that controversies with scientific constructs artefacts at their centre, should be an increasing feature of the times. It was Langdon Winner the American Political Scientist in the 1970's who coined the, to me, compelling little phrase that technology is legislation. It's the technologies that shape the true conditions of contemporary existence.

So I say, if there's going to be controversy great, because these controversies carry important social and political meanings and significances which bypass most of our conventional parliamentary or established political institutions, which, and its no coincidence here, are losing public identification at a great rate, is there an association here? And understanding these questions about controversy also seems to me to have very important potential implications for science itself, for some of the problems of science itself. Now on that basis, which some which were raised this morning, the issue of young people identifying with science, the issue of recruitment into science, and the falling recruitment of science in universities. The problems of public ambivalence about science.

Let's take GM crops which is the issue that in the ABC context I would be most closely connected with. These are constructs of science clearly. But, they emerge from a very particular political economy of science. That's to say they emerge and then act to reinforce or change particular patterns of behaviour and indeed power in society. They affect farm practice, they affect the disposition of benefits within the agricultural economy, they affect the wider environment and how people feel about it.

Now, public debate and copious social research on GM controversies in Europe now shows that this issues that have fed these controversies, forget the pressure groups for a moment, let's talk about just people, the issues that concern many people go way beyond the gambit of conventional...the issues picked up in conventional scientific risk assessments. The specific identifiable, specifiable threats to health or the environment. And incidentally when I refer to people, plain people, let's not forget that a hell of a lot of people have scientific training are scientifically literate. It's a wholly false opposition to talk about as it were the 'scientists' and then 'the rest'. Things are far, far more fluid than that.

Recent work for the European Commission and others shows that people in general are not flatly hostile to GM crops, but they are wary, ambivalent, sceptical, they express concern at what they see as scientists and politicians repeated assertions, over confident assertions, and effective denial of potential blowbacks or surprises. They ask 'who will really benefit?', they question the general disinterestedness, the genuineness of whether the research base and the regulatory systems are truly disinterested. They ask 'why is this happening behind the hype about feeding the world?', in relation to specific issues in front of them. They ask 'who will pick up the pieces when and if something goes wrong?', 'who will be responsible?'. Now, in official parliaments, and in the language of science, and I have to say the Royal Society and others are included in this, the issues of this kind are characterised as 'none scientific', these are ethical, political matters of preference, sometimes even emotional. They are seen as essentially objective, in contrast to the

robust objectivities of science. I refute this. These are not none scientific issues, they are very much about science and technology, but science and technology as understood, in its reality in the contemporary world. Indeed they are realistic issues about science itself. The regulatory systems, the fact is most science in the GM sphere is commercially owned and driven. People are right to wonder about that, even the public sector funded research is aimed and 40% of patents in the US developed in US universities are being sold into the private sector. The ownership of scientific knowledge is being increasingly privatised, the regulatory systems for GM plants have been in effective denial of particular classes of uncertainty and surprises which present science can't identify, but which all experience suggests may very well arise however remote the possibility. And the interests of some people rather than others will be favoured.

Now what are boxed here as none scientific concerns are indeed centrally significant for the way that science is really being done in the real world now, and this is the real challenge for science and communication it seems to me, to get hold with this, and I have to say that within the...even the strategic government advisory committee I find that issues like these are persistently marginalized by the scientists in those contexts and characterised as sort of intellectually below the salt, and they are not about the science. They essentially capture some marginal. Now when we get into the issue of nano-technology, which is as it were prospectively another wave, and we can see the first signs beginning we are going to face these questions in (spades) so, I'm going to cut short, because I am under pressure now from the chairman, I was going to hold forth about nano-technology and I will do so except from there, but I just would underline that these...that my central point, which is that, for the period ahead the issues which science communication is going to have to address are how to help us all to recognise the full extent to which science and technology in the modern world is increasingly, intensely social, embedded socially, its ethical and political in its nature, as a reflection of its significance its huge significance for us in our world, and how, buried within these new configurations of controversy that we are going to see waves of

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them, mutating and being constituted through the changing real world in which science funding and development takes place, how we are going to articulate and express and in a sense bring into the mainstream of society these concerns. There are very important developments in the human genetic sphere and in other parallel spheres. They are all isolated initiatives at the moment, I think this is the great challenge ahead for science communication, it has wonderful opportunities and major responsibilities to help clarify them I think.....Thank you.