



The Save British Science Society

SUPPORTING SCIENCE & THE APPLICATIONS OF SCIENCE

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Should we trust scientists?

Talk at ***Borders*** Bookshop
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Expert Opinions Exposed
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It is a pleasure to be here in **Borders** bookshop, and to be taking part in National Science Week, which is a very important series of events to bring science alive for a wider audience.

This is part of the “Expert Opinions Exposed” series, but I am not really any more of an expert than anyone else on this issue, because the question “should we trust scientists?” is one for the whole of society, not just for the scientific community.

In trying to get to an answer, I actually want to pose three questions:

- why are we asking the question “Should we trust scientists?”?
- do we, in fact, trust scientists? and then of course
- should we trust scientists?

Why are we asking this question?

During national science week, there are 101 different things we could talk about. So why have we chosen to discuss the trustworthiness of scientists and engineers?

The answer is obvious if we treat the media as a barometer of public opinion. Over the past few years, the papers have been relentless in their reporting of stories that seem to be critical, sceptical, or even distrusting of science and of scientists. We can all name plenty, but immediately springing to mind are mad cow disease, genetically-modified organisms, depleted uranium, measles mumps and rubella vaccine, and of course, cloning, which is in the news all the time at the moment.

It seems to me that these stories fall into three categories.

(i) stories about new technologies – new technology brings new risks, and people have concerns about those risks, which are by definition unquantified. Health risks of mobile phones, and genetically-modified foods are obvious examples, although many people are less worried about mobile phones because they can see the benefits to themselves – their phone is useful – whereas they do not yet perceive benefits of genetic modification.

(ii) stories about public policy problems where the solution requires a scientific dimension – governments need advice all the time, and often the solutions to problems require some kind of scientific input, even when the problem itself cannot be blamed on science. BSE and the MMR vaccine are both examples that spring to mind, where many members of the general public are sceptical about what scientists are saying, partly because of misrepresentations (like the assurances in the early 1990s that eating beef was completely safe when the scientific advice was actually more circumspect) and partly because science is often about uncertainty, as in the case of MMR.

(iii) cock-ups – the third kind of story that has led to problems of public perceptions of science is the good old cock-up, of which the superlative example is the possible mix up of cows’ brains and sheep’s brains in the laboratory where they are trying to find out whether sheep can contract BSE, and potentially pass it on to humans. We still do not actually know whether anything really went wrong, but there is a degree of uncertainty, and the ***Evening Standard*** had a front page last October with two pictures labelled “A handy guide for ministers and scientists – this is a sheep, this is a cow”.ⁱ

Do we trust scientists?

Having established that the topicality of scientists' trustworthiness is based in a series of stories about the problems of new technology, the use of scientific advice and unfortunate blunders, we can turn our attention to the question of whether or not we do, in fact, trust scientists.

Obviously, one part of the answer is that we have some concerns. The House of Lords said a couple of years ago that there is a "crisis of confidence" in science, which is another way of saying that we do not trust all scientists all of the time on all subjects.ⁱⁱ Just last week, the Royal Society had a discussion meeting on this subject, which was another indication that the scientific community is worried that some parts of society do not always trust us.

The BBC held one of its "Talking Point" discussions, and people like Simon, from Cambridge, said things like: "By trusting scientists, you throw away your rights to analyse and question their results".ⁱⁱⁱ

As for hard evidence, that is rather mixed. It is true that on some subjects, people are sceptical – 49% of people say they do not trust scientists "at all" when they are talking about the issue of cloning.^{iv}

But other evidence contradicts this view. A study by Professor Helen Haste of the University of Bath reported that young people think that scientists make a valuable contribution to society^v, and a survey by the Wellcome Trust and the Office of Science & Technology last year found that 80% of people are amazed by science, and think that scientists should be funded by the government to get on with their work.^{vi}

And if you ask people directly: "Whom do you trust?" then scientists do quite well. Doctors, teachers and clergymen always top such polls. They are the mainstays of the traditional British community and it would be odd if they were not considered trustworthy. Next in the list come professors (including presumably scientific ones) and judges. Scientists come seventh, which I think is pretty good given that most people probably think they don't know a scientist, and is certainly better than the police or the man and woman on the street, and way ahead of journalists, politicians and civil servants.^{vii}

So in fact, broadly speaking, although we as the public have some scepticism about some developments in science, we do seem to trust scientists.

Should we trust scientists?

And so to the question on the order paper: "Should we trust scientists?"

My basic answer to this is to observe that scientists are just people, the same as everyone else, and, in the abstract, there is no particular reason to imagine that they are any more or any less trustworthy than anyone else.

A moment's further thought will remind us that science is all about testable predictions, and scientists cannot hide behind untrustworthy results for ever, because sooner or later someone will reveal that their work is false. So if anything, there may be a modicum of support for the view that scientists may have to be slightly more trustworthy than other people.

But there must then be reasons why the series of sceptical stories has emerged, and why the House of Lords talked about a “crisis of confidence”. There must be some underlying cause that gave rise to the suggestion that scientists may not be wholly trustworthy.

Well, the most obvious thing is that deference is dead. We no longer blindly trust any figure from the establishment, or other figures of authority. Broadcast interviewers no longer ask the Prime Minister whether he has any further pearls of wisdom he would like to dispense to a grateful nation, as they did forty years ago – they give him a hard time, and rightly so. Likewise, scientists are given a hard time.

53% of people in a poll last month said that they wanted more say in what kind of science is done^{viii}, and if the scientific community does not continue to seek out new and innovative ways of involving the public, scientists will find that scepticism about their work only heightens.

The other reason that we are all becoming less trusting is to do with our concerns about who pays for research. For example, some 12.5% of university research is now funded by private industry^{ix}, and most of us believe that “he who pays the piper calls the tune”. Private companies exist to make money, that is what they are for. Not surprisingly, 55% of people in Britain agree that “the funding of science is too commercialised”.^x

As it happens, the scientists who are most trusted on issues like BSE and nuclear power are those in universities, followed by those in industry, followed by those in consumer organisations and pressure groups, followed by those in Government Departments.^{xi} People worry about industrial and government scientists because they believe that their paymasters do not always have open and honest agendas.

There is some evidence that the fear of attempted pressure by funders is real. One in ten academics is reported as having been put under pressure to “alter, suppress or delay publication” of their results.^{xii} Being under pressure does not mean that these people actually did cheat when they reported their science, but this observation does demonstrate that non-scientists are not entirely unjustified in their concerns about funding pressures.

Many people are concerned that when the Government announced a big tranche of new money for the science base in 2000, it came with the condition that universities had to raise matching funds from elsewhere. The total they have to raise is £325 million, which is such a great deal of money that it is difficult to imagine where it is going to come from unless it comes from business and industry. Now if business and industry are going to stump up £325 million, they are going to want something in return, and it would be naïve to believe that they do not want to influence the kinds of questions that are asked in the experiments and studies that are undertaken within the new laboratories.

I do not want to be misunderstood as suggesting that industrial science is less honest or less trustworthy than any other kind of science because I do not believe that to be true. But companies exist to make a profit, and they

do not have an interest in exposing everything they do. Their interests lie in keeping their secrets.

So, the answer is that we should trust scientists as individuals, but in order both to know what is going on in our names we should retain a questioning and probing attitude to their work. In particular, we should not knock the media for stirring up trouble about science, because open examination of what scientists are doing is the best way, indeed the only way, of exposing the shortcomings of a tiny minority, and of demonstrating the trustworthiness of the overwhelming majority of scientists.

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Notes and References

ⁱ *Evening Standard*, 19 October 2001.

ⁱⁱ *Science and Society*, House of Lords Select Committee on Science & Technology, 3rd Report, Session 1999-2000 [HL Paper 38].

ⁱⁱⁱ www.bbc.co.uk

^{iv} *The Guardian*, 8 June 1999.

^v *The Independent*, 22 December 1999.

^{vi} *Science and the Public: A Review of Science Communication and Public Attitudes to Science in Britain*. Office of Science and Technology/The Wellcome Trust, London (2000).

^{vii} Worcester, R. M. (1999) *Seeking Consensus on Contentious Issues: Science and Society*, talk to the Foundation for Science and Technology, July 1999, based on a MORI/BMA survey carried out in January 1999, in which roughly 2000 British adults were questioned.

^{viii} Reported at the Royal Society National Forum, 6 March 2002.

^{ix} *Higher Education-Business Interaction Survey*, Higher Education Funding Council for England (2001).

^x Reported at the Royal Society National Forum, 6 March 2002.

^{xi} *Science and Society*, House of Lords Select Committee on Science & Technology, 3rd Report, Session 1999-2000 [HL Paper 38].

^{xii} *Times Higher Education Supplement*, 8 March 2002.