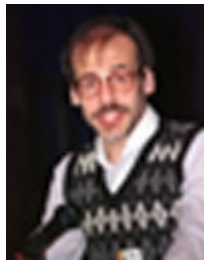


## New Scientist and Greenpeace Science Debates

### Science, technology and our future: the big questions

#### Can Science be directed?

28th May 2002



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... I'm going to try to create something disagreeable here.

The first point I want to make is that nowadays we think of scientists as being a very specialised group of people but in fact the term scientist, and the idea of there being a very specialised career of being a scientist, is really no more than 100 to 160 years old. And in fact if we look at the English language the word scientist was coined in the 1830s by William Hewell. And it is this point that we start to get the idea that doing science is a specialised field rather than what it had been traditionally, namely the sort of thing like physical fitness that any free person ought to be able to engage in. When people talked in the 18<sup>th</sup> century about science as the force of enlightenment this is what they meant. They meant that science would be integrated into people's lives so regardless of whether you were working on a particular experiment, you would be able to understand and talk sensibly, and perhaps even participate in decision making having to do with the disposition of scientific research. Now these days are long gone, they have been gone for at least 50 years maybe even longer but my interest in science as a sociologist of science, and someone who is committed to the democratisation of science, is to recover that kind of enlightenment ideal.

Now it seems to me that this has been lost at several different levels. The first level at which this has been lost is within the scientific community itself. As we all know science is integral to all aspects of social life. In fact, it has been integral to all aspects of social life for a long time even when it hasn't been supported by the state, which is relatively recent in the English-speaking

world. Within science itself though you will find scientists throughout society in various class strata, in various sectors of the economy, in various areas of politics. Nevertheless when you look at who are the representatives for science who is speaking on behalf of science, we typically have a certain usual suspects; the great and the good members of the Royal Society people who went to the best universities in the country. And considering that science itself is fairly democratised in terms of already being integrated within society, this is a rather ironic state of affairs. So the elitism of science partly has to do with the governing structure within science itself that does not fully represent its own membership. So there is a sense in which science itself is internally not democratised.

Of course you can talk about issues about how the peer review system works, which is itself very elitist, and all of this is without talking about the issues of commercialisation which will be raised in the other speaker's talks. So there is a problem of democratisation within science itself that needs to be addressed even after, or perhaps before, we address commercialisation.

But there is an issue which has to do with the democratisation of science more generally in society at large, and the fact that it is generally acknowledged by everyone that the public and science are somehow at odds with one another. It is not that the public dislike science; if you look at the sales of popular books about science they have never been higher. Science television programmes are very popular, science is quite important as far as providing a sort of public level of spirituality that was previously fulfilled by religion. But why people get upset about science is that they don't understand exactly how science interacts with politics, industry and more than that, whatever knowledge they have gained from the popular literature of science they have no forum in which to exercise their opinions about this so it's purely passive, it's purely spectatorial, there is no organised forum for this. This is really the pressing question. If we want to talk about the democratisation of science and society we have to come out with some very clear institutions that have the backing of government and the support of the scientific community that will, on a regular basis, enable the public to participate. And until that happens we are going to have the discontent that we see at the moment.

It is not the fault of the journalists and it is not the fault of the scientific community necessarily. If anything this is a problem with political will. In other words, introducing a level of democratisation where it hasn't been before. I would suggest, in a concrete way, that we need the institution of the consensus conference which has, of course, been used in this country episodically and has been used in 25 countries throughout the world, including those like Japan and Korea which do not have a strong tradition of participatory democracy.

I would like to recommend this as a way to integrate the public more thoroughly in issues having to do with the role of science in society. The idea is basically a citizen's jury concept which literally means that there are members of the public who are participating as jurors. And there are witnesses, expert witnesses, they are members of the scientific community

and members of special interest groups such as Greenpeace each of whom have very strong well-formulated views about an issue relating to science and technology that is relevant to society. The jurors have been given a brief, namely to draw up policy guidelines which will provide the constraints within which the duly elected legislators will decide what the policy should be on the matter. In other words, the consensus conference is not designed to usurp parliament but rather it is a way of providing some kind of initial input of guidelines and constraints.

Now why should we have this kind of procedure? That has to do with the way in which science and technology impacts on society at large. The first point is that often the impact is indeterminate. The interesting thing about the consensus conference is that they are like jurors; that is to say relative to the issue concerned they are neutral they are not already stakeholders. Because science and technology issues, if they are of general social import, could potentially affect everyone and we don't know that yet, so that kind of uncertainty has to be built into the people making the decision. So the uncertainty of not knowing whether you yourself might be personally affected by what we are talking about which could be something like gene therapy or genetically modified foods, or whatever, is a very important feature about the decision makers because it is potentially universal but you don't know exactly who is going to be affected by it, it could be you, it could be your children maybe. It is not you at all and that is a very important feature of the decision making.

What you find in each of these cases is that the public is able to come up with some very reasonable guidelines. They think beyond their own interests. They think beyond their own personal or family interests because as a collective endeavour you are forced to make these kinds of decisions. I may not want gene therapy but I may allow this on someone else because the scientific evidence seems to be reasonably good and it doesn't seem that dangerous or the risks are such that I would allow other people to take the risk if they want to. This is a phenomenon that comes up again and again from these consensus conferences; that people are not irrational about this they are not just going for the most risk averse strategy. Rather they are quite open, and in fact one of the things they like about this kind of process is that their opinions are being taken seriously. I think a big mistake that the scientific community often makes when they are dealing with the public is that they think that the problem is just ignorance and fear when in fact it is just lack of participation.

If you get the public involved more directly it doesn't follow that they are going to be risk averse maybe at the beginning they will but as this process becomes more and more integrated with the way science policy works then it seems to me that the public will become more adventurous because they will understand how their decisions - how they think about things - is impacting on the way in which science is being brought about in society.

So to conclude, it seems to me that the way to go as far as the directing of science is concerned is toward greater democratisation, but it requires that we

have clear institutions for doing this and the consensus conference it seems to me is a very good model for doing this. And moreover if the history of consensus conferences so far across the world is any indication, it will not necessarily lead to people being afraid of science or wanting to close down science; little by little you will find there will be greater integration and greater openness through participation and in that respect I think that people will come to trust the scientist more and the scientist will come to trust the people more.