

Science Communication – a critical discussion of the report from the Danish Think Tank on Public Understanding of Science

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Does Participation in Dialogue Lead to Consensus?

I would like to start by congratulating the Danish think tank on Public Understanding of Science with its decision to change the agenda behind their commissary. I think they were completely right in changing the question from one of how to get more science dissemination into a question of how to get better science communication. This said, however, I think that we need to be a bit sceptical about their expectations towards the outcomes of dialogue and two-way communication. My scepticism has three important aspects.

First I think that there is a tension between the explicit wish to increase dialogue and the high focus on mass media. Mass media is good for many things, but it is not, and will not be, a very suited medium for dialogue. Although we might experiment with new forms mass media it still a medium with senders and receivers, and the staging of any dialogical form is completely controlled by the senders, in this case the scientists and the journalists.

This leads directly to the second point I want to make. The explicit expectation in the report is that more dialogue and new forms of communication will automatically increase the level of interest and understanding towards science in the general public. This, to me, is a very naïve expectation. I know that I am speaking against a very powerful ideal in Denmark, but why is it that we are so convinced that dialogue and involvement leads to consensus? We have this notion that public debate will automatically lead to some form of agreement about the right way to solve problems. There is, however, little evidence that this is the case. As an example, decades of debate about biotechnology have not lead to any form of consensus. Quite on the contrary. The debates are just as heated as 20 years ago and the core issues are more or less the same: Is it morally defensible to tamper with the genes? Will we loose our humanity by altering nature? Or, should we not support the creation of new medical technologies in a hope for the future, rather than be stopped by fear?

I don't think that dialogue and new forms of communication can make these disagreements go away. In my eyes, the controversies about biotechnology and other controversial forms of science are deeply political or, you might even say, ideological. Therefore, scepticism and distrust towards science is not just a matter of not knowing about science. It is not a problem that can be fixed with a little information. Rather, the controversies about science and the distrust or disinterest is rooted in fundamentally different ways of thinking about science and the risks and benefits of science. And this leads me to my third point.

The report from the think tank is making a classical mistake in speaking about a 'broader public', as if this is a coherent unity of some sort. As mentioned, I believe that opinions on science and technology are based on basic ideological notions of the role of science in today's society. To some people science is a solution to problems. To others, science is the cause of problems. And to yet others, science is nothing – it is a mystery that has nothing to do, what so ever, with their daily life. The important thing in this context is that each of these groups will relate to science communication in very different ways.

The first kind of people, who are already thinking of science as a solution, might well be interested in knowing more about science. However, they might not be interested in science in general, but in very particular issues. They are not necessarily sitting passively waiting for science communicators to come and pour knowledge into their heads. Rather they might be seeking it actively according to very specific criteria and I think it is extremely important to meet these people at their interests rather than at the issues that science communicators think are important.

The second kind of people, who thinks that science is really the root of most evils in contemporary society, might also be very interested in knowing more about science. But their motivation is to know more in order to be able to protest and set limitations on science. They do not share this basic assumption that science is basically a beneficial activity. Rather they are learning about science in order to be able to fight it. To these people science communication – either in monologue or dialogue – is not necessarily going to reduce their scepticism. It might actually increase it.

The group that I find most interesting and problematic in this context, however, is the third group. This is the kind of people that the think tank most desperately wants to get at. These people that just don't know, or don't care, are the ones that is intended to be made interested by suggestions from the think tank: exciting new formats and a change in style from monologue to dialogue. What is overlooked, however, is that these people might have a variety of reasons for not being interested. If you perceive of yourself as completely outside of influence in society or if you simply do not share any of belief that it is possible to generate knowledge about the world in a reliable way – then pleading ignorance might not be such a stupid choice after all. If you assume that you don't have any say in the workings of the world or the political order of society – why then, should you be interested in knowing about science. By this, I do not say that I agree or share this fatalistic standpoint, but I can understand why people choose it, and I can also see how fundamentally difficult it is to change this attitude. So, generating dialogue and two-way communication is not a simple thing and it might not have the outcomes that we expect.

Does scientific accountability lead to public acceptance?

In order to understand the significance of the report from the think tank, however, I think it is necessary to take one step backwards and discuss the guiding assumptions behind the think tank. In the background papers, the minister for science, technology and innovation presented the assumption, that more science communication should be seen as the prerequisite of an innovative, prosperous society build on high-tech innovation and research. Following this, science communication has come on the agenda because the needs of society have changed. Earlier, science was hiding in an ivory tower secluded from the normal daily life of ordinary citizens, but now the needs of these citizens have changed, and therefore we need to have more communication of scientific results.

I would argue, however, that it is not just the needs of society that might have changed, but also the societal status of science. That is, our understanding of the role of science in society. This change in role means that science has lost it's privileged position as an unquestioned authority. Rather than being taken for granted, science is now finding itself in a

situation in which it has to prove its legitimacy. It has to demonstrate its usability, as the benefits of science are not simply considered obvious any more.

In many ways this development must be seen as positive. It means that science is finally seen as an integrated part of society – as something that has an impact on us all and therefore must be discussed as a political issue. It has become common to talk about making science accountable to the public and making scientific knowledge socially robust. The public should know about the outcomes of scientific research in order to decide whether the scientific knowledge production is actually valuable to society. Following this, scientific knowledge should not just be true, but also socially acceptable. The issue of human cloning serves as a good example of a scientific research program where the knowledge base might be true, but where it is socially unacceptable.

However, this focus on the accountability of science also poses some problems that I would like to point out. Making science accountable to the public means that the outcomes will be evaluated in connection to inputs. It thereby runs the risk of pretending that research is a kind of controlled activity, where it is possible to predict the relation between input and outcome.

I have seen this very clearly in the public communication about stem cell research. In order to allow stem cell research, legislation on the status of the embryo was changed last year. And in the public debate about this change it was so clear that politicians and others kept asking stem cell researchers: Can you promise us, that if we let you do research on embryos now, this will lead to cures of Alzheimer in 10 years time? If we let you do this, which we really don't like – is it then absolutely certain that it will pay back? And researchers typically tried to avoid clear promises, but they didn't go out of their way to correct the wish for certainty of outcomes either. The typical response was: well, we can't promise anything, but we think that we can.... And then there would be a long list of positive outcomes.

The bottom line, however, is that nobody is able to give that guarantee. It is not possible to promise outcomes of scientific research. Science is risky

business in more than one way – you may spend millions, but you have no guarantee of usable outcomes. And particularly in connection to genetic research there is still a very long distance between the hopes and the actual outcomes.

Now, to me, neither the politicians nor the stem cell researchers are to blame for this lack of awareness about uncertainty. Rather, it is a direct outcome of the way we discuss science at the moment. The more we want science to be accountable, the more we also demand that science should be able to foresee its outcomes. And that, to me, is deeply problematic. High hopes that are not fulfilled might lead to backlash and distrust rather than more acceptability. If the public expect scientists to sell science by guaranteeing future miracles, then they run the risk that the public risk might be very disappointed.

In this context, it is important that science communication is not solely concentrated on the outcomes, that is, how science will produce miraculous cures and exotic new possibilities. Rather, it should also focus on how science actually works, that is, how it really works in the nitty, gritty details of laboratories, conference, articles and books. This might lead to discussion, questions and problems, and the public might not always find the scientific explanations valuable. But it is important that we don't forget that science will never be able to promise specific results and outcomes, so there is limits as to how much accountability we can demand. Stem cell research might deliver results, but we do not know. And to me that is the most important point in communicating stem cell research.