

Is public debate a good forum for discussing science issues such as climate change?

As science and technology have advanced they have grown from being peripheral to underpinning every aspect of modern life. This means that the issues that concern society are increasingly scientific issues – ranging from climate change to genetic engineering to the increasing cost of drug development. It is therefore deeply important that politicians, journalists and the general public are well informed about the science underlying these issues. Threats and opportunities revealed by scientific research must be acted on, and public policy must be guided by the scientific evidence and advice.

One of the main avenues for discussing issues in the media is via public debate, which pits those with opposing views against each other to try to convince the audience. This style of debate lies at the heart of our political process. The adversarial nature of such debate allows the government to be usefully held to account, revealing faulty arguments and errors or inaccuracies in assumptions. It also allows minority voices to be heard, since debate requires an opposing voice to be found to argue against even popular policies.

What happens when this style of debate is applied to scientific issues? The scientific method of answering questions is to come up with a coherent set of ideas about how the world works – a theory. You then carry out experiments to check if the theory is correct. If the result of the experiment does not match the theory then the theory must be changed. If two groups of scientists have differing views on a scientific question, for example whether manmade emissions of greenhouse gases are leading to climate change, then it cannot be settled by argument or popular vote. The answer must be determined by the painstaking acquisition of knowledge, and by detailed discussion and collaboration.

This means that it is often very difficult to convey a nuanced scientific position within the context of a short public debate, which typically only lasts from five to thirty minutes. Since scientific theories can always be overturned by fresh evidence scientists often speak in terms of probabilities, which can make their arguments sound weaker than the sometimes spurious confidence of their opponents. Journalists and politicians prize certainty, since being unsure is not the route to popular interest and support. Victory in a debate will often go to the person able to produce the best sound bite or with the most convincing television manner, rather than to the argument backed by the strongest evidence. Another issue is that the journalistic notion of balance is to get one person from each side of the argument, no matter how outlandish one side might be. This can lend credence to positions such as arguments against climate change which they do not deserve.

This clash between the scientific method and the political method of public debate may explain why many debates on science issues have been seen as failures. There is widespread scientific consensus that man-made greenhouse gas emissions are likely to lead to significant climate change if left unchecked. This has not however led to the same level of public belief in and action on the issue. Public debate is often acrimonious, and the issue has become politically divided, especially in the U.S. A recent poll by Pew Research Center showed 85% of Democrats said there was solid evidence of warming, versus only 48% of Republicans.

This all seems like an argument for avoiding public debate on science, but this would be a mistake. News programmes such as Today and Newsnight set the news agenda and tone, and are listened to and shape the opinions of the most influential people in the country. Scientific issues will increasingly be discussed in these forums, and without the scientific perspective journalists are often unable to challenge on even basic factual inaccuracies.

Rather than abandoning the field of battle scientists should improve their weaponry. It is not necessarily the fault of the format and the media if they fail to effectively communicate, and a lot could be learnt from politicians and the P.R. industry about how to improve. It is important that they think very hard about the language used and frame things appropriately for the audience. For example people aren't good at thinking about uncertainty and risk but they are very keen on buying insurance, so perhaps this is a good metaphor to employ for taking action on climate change. It is also important to appear non-partisan so that people who aren't natural supporters are not switched off. Arguments for environmental policies can often also be made on economic, national security or conservationist grounds as well.

In order for costly, sustained action to be taken on such scientific issues politicians, the media and the public must be convinced of the need for it. This can only be done by engaging fully in the public debate. Without this engagement such action simply will not happen.