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PERSPECTIVE

Is journalism failing on climate?

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How can we build a reliable and affordable energy supply based on renewables? How rapidly do we need to cut greenhouse gas emissions to keep climate change within manageable bounds? What does it take to maintain a stable common currency of different nations?

These are just a few examples of questions that are critical for our future and that require an understanding of complex systems—the energy system, the climate system, the financial system. Finding sound answers to these questions requires sophisticated scientific analysis and expert knowledge; a lay person's intuition will clearly not suffice. Yet, decisions in a democracy are (and should be!) taken by politicians and the voting public who are not usually scientific experts. Hence the well-being of our societies—and even more so the living conditions of future generations, which are defined by the decisions we take today—depends on the wider public being well informed about the state of scientific knowledge and discourse.

The media are the most important means by which lay people obtain their information about science. Good science journalism is therefore a decisive factor for the long-term success of modern society. Good science journalism clearly must be critical journalism, and it requires journalists who know what is what, who can put things into a perspective, and who are able to make well-informed judgements. After all, the role of science journalism is not simply to act as a 'translator' who conveys the findings of scientists in a language understandable to lay people. Rather, good science journalism will provide the public with a realistic impression of what is well established in science and what are current 'hot topics', uncertainties and controversies. It will also discuss the methods and social context of the scientific endeavour.

There is ample evidence that in the area of climate science, journalism too often is failing to deliver this realistic picture to its audience, despite many good science journalists. Perhaps this can be most clearly seen from the end result: does the public have a realistic understanding of climate science? Data from the world's prime science nation, the US, suggest not.

To give just one striking example, a representative poll conducted by Yale and George Mason Universities (Leiserowitz *et al* 2011) in 2011 asked the US public what percentage of climate scientists think that global warming is happening. The true answer is a number well above 95%, as surveys of climate scientists or the scientific literature show (Anderegg *et al* 2010, Doran and Kendall Zimmerman 2009, Oreskes 2004), fully consistent with my own direct experience of working in the climate science community over the past twenty years. But only a small minority (13%) of the survey respondents picked the correct category (81–100%). The largest group of respondents (24%) chose the category 41–60%, i.e. they erroneously thought there are two roughly equal camps in climate science—and this despite the question not even being about the anthropogenic contribution to global warming, but only about the measured fact that global climate is warming! That shows that the general public, at least in the US, has no idea of the very

broad consensus that exists in the scientific community about fundamental aspects of climate change.

How can such a vast misconception of what is controversial and what is well-established in climate science come about? Important evidence is provided by the analyses of media articles on climate change in six countries just published by James Painter, a BBC journalist for many years, and Teresa Ashe from the University of London (Painter and Ashe 2012).

Painter and Ashe analysed climate articles in quality newspapers in the USA, Brazil, China, France, India and the UK over two periods in 2007 and 2009/2010. They find that the voices of 'climate sceptics' are particularly present in the US and the UK, namely in one third and one fifth of the examined articles (respectively) during the latter time period. The US and the UK also were the only of the six countries where 'type 1' sceptics (Rahmstorf 2004)—those that deny even the existence of global warming—got a significant media airing. The 'sceptical voices' are particularly prevalent in right-leaning papers.

What could be wrong about airing sceptical voices? In principle that is one of the strengths of free societies, of course, but in my view two problems can arise. Problem one occurs if the overall balance is so skewed that the public is given a seriously false impression of the scientific discourse: a phenomenon known as 'balance as bias' (Boykoff and Boykoff 2004). Media tend to balance statements with opposing views, which is fine with matters of opinion. But this tendency to 'quote the other side' then gives the public the erroneous concept of there being 'two equal camps' in science, as the poll cited above shows. The late Steven Schneider, one of the great communicators of climate science, used to say that this is as if with each report of a satellite launch, someone from the Flat Earth Society was quoted for balance.

Problem number two arises if the facts are outright wrong. To give one example, the British TV documentary 'The Great Global Warming Swindle' claimed that volcanoes emit more carbon dioxide than human activities, in a bizarre brew with many other falsehoods, deceptive graphs and fabricated data. A representative of Channel 4, where the documentary was first broadcast, justified this by stating: 'this is a controversial film but we feel that it is important that all sides of the debate are aired' (Wikipedia 2012). Again the false impression of a 'debate' was promoted about issues where none exists, instead of shedding light on the real controversies which of course can be found in climate science just like in any other field of research. But how is the viewer to know, e.g., that in reality anthropogenic CO_2 emissions are a hundred times greater than volcanic ones (Gerlach 2011)? How ethical is it to present false claims as 'other side of the debate'? I suspect that in a TV documentary about history, a similarly cavalier attitude about well-documented facts would be unthinkable.

Even some high-quality media are affected by the atmosphere created by the aggressive lobbying activity of 'climate sceptics' interest groups. Some time ago, an otherwise excellent article on sea level rise in a US newspaper cited a 'climate sceptic' falsely claiming that the current sea level rise had been on-going since the end of the last Ice Age. I asked the author, a good environment reporter, why she included this false claim by a scientist who is not noted for any research on sea level. She responded that in the US, she cannot publish articles on climate change without citing a 'sceptic', even though she knew well the statement was wrong.

You would not find newspapers that routinely seek commentary on soccer tactics from a golfer or tennis player who claims that everything that the successful soccer practitioners say is wrong. Or newspapers that would print the views on the latest heart transplantation techniques by a dentist who muddles even simple verifiable facts on the matter. In climate reporting, though, such things are commonplace. Yet it has never been easier to find out who the

successful practitioners of science, i.e. the genuine experts, in a given research field are, thanks to the online scientific publication and citation databases.

Of course, as in every science, many issues are legitimately debated amongst climate scientists. But these real controversies are quite different from the fake controversies about global warming pushed into the media by various ill-informed lay people, pseudo-experts and hardboiled interest groups. Far too few journalists have bothered to investigate and describe the activities of such interest groups, like the Heartland Institute in the US, which in a bill-board campaign earlier this year likened those who accept the facts of global warming to mass murderers (Hickman 2012). Yet the public also needs to understand the background story about where the 'climate sceptics' claims originate and who finances their dissemination.

Let us hope that the study by Painter and Ashe will help to initiate a critical discussion on climate science coverage in the media, particularly in 'Anglo-Saxon' countries, and help to improve it in future. There are so many science journalists out there who work hard every day, striving for quality under most difficult working conditions. Their efforts should not be in vain.

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