Minority report

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Explaining science to journalists and the public on blogs is fast and efficient. But is it all just too good to be true? Can science survive Web 2.0?

It seemed such a good idea at the time. You may recall the film *Minority Report*, in which a futuristic society develops a way of detecting crimes before they are committed, so athletic black-clad operatives can crash in and stop the bad guys in the act. Minor niceties like due legal process have to be dispensed with, but it works: violent crime is a distant memory, and the character played by Tom Cruise is the system's toughest proponent.

Like Cruise's character, I thought it was a great idea when mainstream climate scientists moved into blogging as a means of communicating and interpreting the results of the latest papers to the wider world. It is always frustrating when a paper appears that we all know is complete rubbish and it gets feted by the usual suspects as the final definitive proof that man-made climate change is a myth after all. A rapid rebuttal system, in sync with the news cycle, to allow honest journalists a chance to get their facts straight seemed like a great idea. Yes, I remember some greybeards muttering something about the integrity of the peer-review process, but the Editor of *Nature* approved, so what could possibly go wrong? But then, just as happened to Tom Cruise's character in the film, they came after me…

Our "crime" was to publish a paper reporting that it was surprisingly easy to generate climate models that were not obviously worse than the standard models available at the time, and yet produced outrageously high levels of warming in response to doubling carbon dioxide. Shortly after publication, I was told that Realclimate.org had published a rebuttal giving a very different interpretation of the results from our own. By the time I heard about it, the blog was over a week old and the discussion was petering out, so I thought no more of it.

But these things sit around on the Internet, and over a year later, two journalists picked up the story and, led on by what they had found in the blogosphere, accused us of distorting our results for the sake of publicity. It didn't seem to occur to them that we might appreciate the implications of our own experiment better than the Realclimate bloggers who had just read our paper. As it happened, what Realclimate thought was our main finding, instead of the possibility of an extreme climate response to doubling CO_2, was just an artefact of our experiment design.

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But a year had passed, and the blogosphere had moved on. Bloggers are a sociable bunch, citing each other heavily, so anyone frequenting their sites would get the impression that all serious scientists know the climate sensitivity is 3 °C and only a few extremists still insist it might be much higher. This is certainly not the message of the peer-reviewed literature, but what journalist would go to the trouble of wading through those papers when all this reader-friendly material is so readily accessible?

Indeed, the only time I know of that one of the bloggers was persuaded to submit their criticisms to peer review, they were duly rejected: proof, the bloggers grumbled, of my malignant influence over the peer review process (journal editors please note). The criticism is still available on his blog. Needless to say, our response is not.

All this seems very remote from the early 1990s when as a young doctoral student I overheard an eminent scientist taking a phone call from a journalist about a paper that we had just been discussing over coffee and which he thought was deeply flawed. He was the model of tact, carefully explaining the authors' claims without a whiff of criticism. The message was clear: they had published their results in the peer-reviewed literature, so if a substantive criticism was to be made, that was the place to make it.

If a science journalist wants to follow a story, there just isn't an alternative to reading those peer-reviewed papers, and painstakingly interviewing researchers for whom English is a third language (bloggers are overwhelmingly Anglo-Saxon). And if a member of the public wants to follow a story, then they are still best off getting it the old-fashioned way, via a science journalist whose reputation depends on getting such stories more-or-less right most of the time. If, as a scientist, you feel you have to communicate non-peer-reviewed opinions to a journalist or member of the public, then stick to communicating one-to-one and make it clear you are speaking off the scientific record. Better still, don't, even if it might cost you a mention in the papers.

Everyone agrees we need to communicate science better to the general public. But more and faster should not be confused with better. I'm certainly not advocating closing science blogs or discouraging science websites. We just need to remember the basic courtesies that our doctoral supervisors took for granted: criticism of peer-reviewed results belongs in the peer-reviewed literature. Direct communication over the Internet, far from creating a level playing field, just ploughs it up and makes the game impossible. The problem is, without witty and cutting criticisms, what is the point of a blog? Sure, the peer-review system is creaking. Sure, science journalism sometimes trips up. But like Churchill's quip about democracy, it is the worst possible system for communicating scientific results, apart from all the alternatives that have been tried from time to time.