

Sceptics as true friends

Phil Willis contemplates science and non-science

The recent landmark ruling by the Court of Appeal, which upheld the right of Simon Singh to offer 'fair comment' without having to submit to 'an Orwellian Ministry of Truth', was not simply a blow to the British Chiropractic Association (BCA) but to all those who seek to silence science sceptics.

That scepticism goes to the very heart of science must never be undervalued, no matter how challenging or uncomfortable the process might be. Indeed, when scientists claim infallibility their science is inevitably flawed. Politicians frequently claim certainty but scientists rarely do, as science continues to evolve and open up new possibilities. It must therefore be the role of those making scientific claims either for products or research to be able to justify claims and provide evidence in the process.

Public funds mean free access

My committee's latest report, which examined the so called 'Climategate' row at the Climate Research Unit (CRU) at University of East Anglia, was an example of how, when scientists seek to deny the sceptics, they create far greater problems than those of compliance.

Professor Jones and his colleagues had every right to perceive requests for data, methods and codes as vexatious, but failing to respond appropriately merely added much-needed fuel to the sceptics' fire. The fact that we concluded there was a *prima facie* case to answer under the Freedom of Information Act sends, I hope, a message well beyond the university. Any publicly funded data should be freely available, as is the case in the United States.

Public support or vested interests

Of course one can argue that there is a huge difference between challenging academic research and journalistic comment, but in reality that is not so. Climate science is perhaps the greatest area of public concern, affecting as it does the very future of our planet. The results emerging from CRU and other groups in the US, Japan and Russia will determine not simply the fees of local therapists, (which may have been the final outcome of Simon Singh's legal action, had the BCA not dropped it altogether), but the trillions of dollars about to be spent in climate mitigation. Without public support, and that has been undoubtedly dented by the events at CRU, it will be vested interests that will prevail, not merely the sceptics.

Nor can we pick which sceptics we will engage with, though the less serious are often the most difficult. The recent accusation by Professor James Lovelock, that scientists have moved from investigating nature as a vocation, to being caught in a career path where it makes sense to 'fudge the data', was particularly close to home. That is exactly what Professor Jones and his colleagues were accused of, following the selective disclosure of some rather regrettable emails.

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Open access and peer review

So how should scientists respond? In the case of climate science, by adopting first an open access policy to data, methods and codes to allow others more readily to replicate and challenge conclusions. Second, by revisiting the peer review process. Whilst I recognise the intrinsic value of peer review, it is not beyond reproach, does not command universal support, is prone to cronyism and should be reviewed – hopefully by the Science and Technology Select Committee in the next parliament.

No article about sceptics would be complete without a return to homeopathy. Of all the areas my committee has examined over the past five years, none has evoked such orchestrated rebuke as this one. I have now a real sense of empathy with Professor Edzard Ernst of Exeter University following his run-in with Clarence House. It seems that being a sceptic of non-science is even more dangerous than being a sceptic of science itself.



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Food security

Tom McMillan demands a broader perspective

Since food prices rocketed in 2008, 'food security' has gained political clout, with research budgets to match. But the billion people who go to bed with empty bellies have little say in the new millions being spent to aid their plight. Fair dos, you might say – it's our money. But taxpayers aren't getting much of a look in, either.

Research initiative

In the UK, the Biotechnology and Biological Sciences Research Council is at the centre of this newfound enthusiasm. In March, it launched Global Food Security, a major new collaborative programme bringing together the research interests of Research Councils UK and government departments in agricultural production, resource management, food economics, social sciences and nutrition.

This answered, in part, a call from the Royal Society for £2 billion more for science to tackle food insecurity. The society laid out its case in a report last autumn called *Reaping the benefits: science and the sustainable intensification of agriculture*.¹

Reaping the benefits has much to recommend it. It recognises that technology is no magic bullet, and that how food is distributed is in practice more important than how much is produced.

Empty words

Whether science and technology help or hinder depends on who has access to it. Know-how and inventions to increase yields, protect against drought or lengthen the shelf-life of food, can all help, if they're in the hands of the people most at risk of hunger. But if it's their better-off neighbours with the new methods or kit, the situation reverses as cheaper food floods the local market and does local farmers out of their living.

The International Assessment of Agricultural Knowledge, Science and Technology for Development (IAASTD),² which reported in 2008, pointed out that improving food security for poor rural people is crucial.

The IAASTD recommends a shake-up of knowledge systems: developing interactive knowledge networks, engaging in multiple stakeholder participation, integrating local and traditional knowledge with formal scientific learning, and changing the focus of organisations to make them more responsive to the needs of different stakeholders.

The Royal Society agrees that participation by marginal farmers and rural communities around the world is crucial to getting research priorities right, and that science doesn't have all the answers. But these seem like empty words when it focuses largely on the science, spells out what the priorities should be and says how much should be spent on them.

Root problem

The seed of this contradiction was sown when the impressive team that wrote *Reaping the benefits* were given their remit. It wasn't 'How best to improve food security' but 'How can plant science help?' As it wasn't an open question, they couldn't give an open answer.

This problem comes up again and again. The latest incident is the Food Standards Agency's call for a new public dialogue on genetically modified (GM) foods.³ The question

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will either polarise opinion or put people to sleep. It would be more useful, exciting and engaging to debate what drives food insecurity and compare a range of ways to address it. Focusing on one mooted solution, however cleverly, misses the point.

Stuck in silos

The need to ask open questions, not close discussion down, was one of the toughest lessons of earlier GM debates. Almost a decade on, our research and regulatory bodies remain stuck in the same scientific silos that they were back then. For the most part, they are asking the only questions they legitimately can.

If we want scientific institutions that can listen to citizens – to the people affecting by all this and bankrolling it – then we need to make those institutions a different shape. After all, if you're stuck in a silo you can only hear the sound of your own voice.

¹ <http://royalsociety.org/Reapingthebenefits/>

² www.agassessment.org/

³ www.food.gov.uk/gmfoods/gm/gmdialogue/



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