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Working Paper 140: Inside and Outside Science: Beware of acting too hastily on Climategate

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Inside and Outside Science: Beware of acting too hastily on Climategate

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Abstract

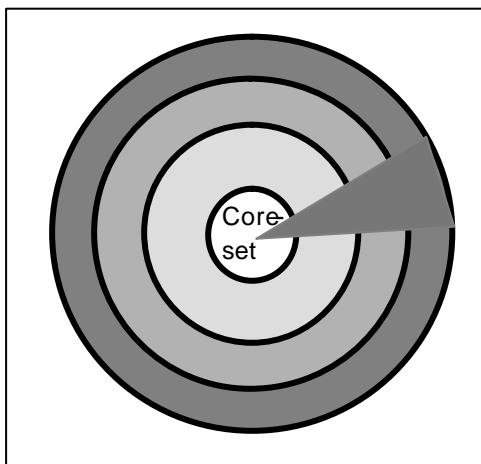
`Climategate' refers to the emails hacked from the University of East Anglia's Climate Research Unit at the end of 2009. What was found in those email caused shock headlines in the mass media and glee on the part of global warming's critics. But nothing unusual was happening; this is the normal to-and-fro of science that is normally invisible – it is 'tidied away' by the time the research papers are published. The moral is that we have to take great care about how we interpret what we read, always bearing in mind the purpose and audience for which it was written.

`Climategate' refers to the emails hacked from the University of East Anglia's Climate Research Unit at the end of 2009. Suddenly we were all given a glimpse of the normally hidden day-to-day working of disputed science. There was some unforgiveable slop but to the sociologist of science there was nothing shocking about it – it's just business as usual. In spite of the mythology, science cannot get by without humans judging other humans. Experiments and observations are open to too many interpretations to speak for themselves. Seeing that judgement exercised can come as a shock if, like most people, you've been brought up on the myth of Newton and Einstein and all the rest – the flashes of genius and point experiments that that reveal unquestionable truth. We hear: `In 1997 the Michelson-Morley experiment proved decisively that the speed of light-speed was a constant, a result explained by the genius Einstein only 20 years later.' We don't hear that in 1925 D. C. Miller was awarded the American Association for the Advancement of Science's Physics Prize for proving that the speed was not a constant but was largely ignored or falsely explained away? Physicists had to make the judgement! (See Collins and Pinch, 1993/1998 for an account of the Michelson-Morley experiment on the speed of light.)

One of the most pervasive responses to Climategate is to try to make the science of climate change a more public activity. Thus Mike Hulme, professor of climate change in the School of Environmental Sciences at the University of East Anglia, and Jerry Ravetz, a scientist turned social commentator and philosopher of science, insist that scientists must `Show their Working'. They write: `To be validated, knowledge must also be

subject to the scrutiny of an extended community of citizens who have legitimate stakes in the significance of what is being claimed ... in the new century of digital communication and an active citizenry, the very practices of scientific enquiry must also be publicly owned.' (<http://news.bbc.co.uk/1/hi/8388485.stm>). In this, Hume and Miller are echoing a glib, 'one size fits all', contemporary fashion in social studies of science – 'sort out all problems of visible scientific disagreement by opening things up to the public'. That this supposed resolution has not been thought through is obvious as soon as you say 'MMR' or, for that matter, 'reintroduction of capital punishment in the UK'.

A considered solution to the problem of public science and technology disputes has to be start with the 'the target diagram'. In the middle of any scientific dispute is a 'core-set' of specialists – these are the people who actually do the experiments, build the theories, and meet together to argue at conferences. In the early days of a debate over something



like gravitational wave detection the number of scientists in the core-set was little more than half-a-dozen whereas what they did was being reported to and discussed in the outer rings by hundreds of their fellow scientists, by funders and policy-makers, by journalists and, to some extent, the public at large. The key insight is

that what happens inside the core-set is hugely complicated. In the early 1970s every waking moment of the scientists locked in dispute about whether gravitational waves had actually been detected was filled with calculations, arguments, measurements, judgments

of other's capabilities, and so on. How could it be otherwise? ClimateGate is just a glimpse behind the scenes of a small part of the blooming, buzzing hive of activity – after all, it is only a few emails. (For the notion of 'core-set' see Collins, 1985/1992)

What it means to be a 'specialist' is to be in there with all those 24-hour-a-day goings on. To be a non-specialist is not to be in there. If you are outside things inevitably become simplified – the bandwidth is too narrow to carry all the nuanced information about what is happening inside and it would be a full-time occupation to absorb it. What happens is that 'distance lends enchantment'. What is nuanced and unclear to those inside the core-set becomes sharp and clear to those outside it. Knowledge roughly follows a 'direct square law' – as it travels further it gets rapidly stronger because all the uncertainties get lost. So people outside the core are much more certain of things than people inside – sometimes they may be more certain in a positive way but where there is disagreement (the shaded segment) there will be much more certainty about the counter view too.

Now, we know from ClimateGate, and from decades of careful examination of scientific practice by social scientists, that the difference between the inside and the outside is not what we once thought it was. We know that scientists' activities inside the core-set look pretty ordinary in many respects. For these reasons we know that we can never go back to the 1950s where the pronouncement of any scientist in a white coat was taken to be authoritative, not only on the science, but also on any policy-related issue. We know that pronouncements on even the science are no longer authoritative and that democratic politics always trumps scientific conclusions. We know that it is better that people know more about the processes of science and understand how this conclusion or that will

affect their lives and that they should be able to choose the science they want. Nevertheless, it must not be forgotten that the inside and outside of science are different in two important ways. First, as explained, there is all that detail and nuance that cannot get out, and second there is a different style of argument within the core because of the detail and nuance and the plain old value system of science.

The value system of science is often honoured in the breach but it still underpins its distinctiveness. Very roughly, it means that, mostly, inside the core, you are trying to get to the collective truth of the matter and this means you start by trying to understand and fairly represent your opponent's position. You have to do this if you want to convince your opponent as well as yourself. And you have some, often forlorn, grounds to hope that you can convince your opponent with argument starting from his or her position because you both know about the nuances and the doubts. Outside there is no such hope because no-one knows enough of the nuances and doubts so disagreements turn into 'campaigns' rather than debate. This seems a subtle distinction but it is quite robust: scientists immediately know when their opponents have ceased to play by the rules and instead of taking their opponents' arguments seriously are ignoring them or caricaturing them and 'playing to the audience'. At that point the scientist is directing argument, not at the core, but outside toward the public. This is 'science war' not science debate.

If one wants to preserve the thing called 'science' as a distinctive way of making knowledge one cannot mix the inside too thoroughly with the outside. The 'bring the public into scientific decision-making' movement is a very good thing, and we can never go back, and should never try to go back. But if things go too far there won't be any

science, there will only be technological populism. In the last resort, there are specialists and there is a special scientific way of going about decision-making – it is different to ‘science war’. To deny that is to licence scientists to forget it themselves and start to campaign like the rest of us. (For discussions of the dangers of ‘technological populism’ and the reconstruction of the notion of expertise, see Collins and Evans 2002; 2007)

What ClimateGate has shown, apart from some bits of unfortunate sloppy practice, is that the IPCC reports have been mixing the outside with the inside too much. If the IPCC reports had reported solely what went on inside science, there would be more reservations and nuances – the reports would be less useful to politicians. The final political editing stage was what turned them from science to campaign material.

Indicative References

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