

CORRESPONDENCE

The letters below respond to the Essay 'We cannot live by scepticism alone'
by Harry Collins (*Nature* **458**, 30–31; 2009).

Let's not reignite an unproductive controversy

SIR — Far from being dominated by scepticism about science, as Harry Collins claims, mainstream philosophy of science opposes the relativism that Collins decries. We are both philosophers of biology, a field that analyses key biological concepts such as species and genes, dissects theoretical debates in biology and examines emerging fields such as systems biology. This work often involves criticism of scientific positions. But if any of it is part of Collins's sceptical 'second wave' of science studies, Richard Dawkins is a bishop.

Collins dismisses philosophy of science as a 'first wave of science studies' largely coinciding with post-war confidence in science and superseded by the work of sociologists of knowledge like himself. In fact, mainstream philosophy of science — which was being developed before the Second World War by Rudolph Carnap, Carl Hempel, Karl Popper, Hans Reichenbach and others — remains a thriving discipline in most universities. It teaches students that science is neither the 'voice of a God' nor merely the view of one social group, just as Collins advocates.

The only contemporary 'philosopher' Collins mentions (though not by name) is Steve Fuller, whose statement to a US court that intelligent design is science Collins uses as evidence that post-modern scepticism pervades science studies. However, Fuller is a professor of sociology. All the philosophers of science who, like Fuller, were witnesses or advisers in the Dover Area School District case (see *Nature* **439**, 6–7; 2006) appeared for the other side, supporting evolution.

Working in an interdisciplinary

research centre alongside historians and sociologists of biology and medicine, we can assure Collins that post-modern science sceptics are thin on the ground. The 'science wars' of the 1990s were whipped up by a selective focus on the work of a very few scholars, many of whom did not work in the philosophy, history or sociology of science. Let us hope that Collins's remarks do not reignite this unproductive controversy.

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What does applying 'scientific values' mean in reality?

SIR — Harry Collins calls for scientists to become 'moral leaders' and says that the 'values of science' can help us run our social and political lives. However, the argument raises at least two questions.

First, what does applying 'scientific values' mean in the real world, beyond observation, theorization, experimentation and 'open debate among those with experience'? If scientific values recognize plurality of perspective, freedom of expression and political negotiation beyond the alliances of the powerful, they would fit with the values of a liberal democracy. But the banner of 'scientific values' could equally be raised by an authoritarian technocracy, in which tacit and indigenous knowledge is marginalized. For example, some powerful people say that

authoritarianism is what we need to tackle climate change.

Second, Collins recognizes that science is fallible and its findings 'do not lead straight to political conclusions'. So where does such uncertainty leave policy-making? How do Collins's scientific values help us in tackling difficult issues such as climate change or genetically modified crops?

Classifying different types of expertise is a worthy start, but we are still left with two further problems. First, who decides what expertise is legitimate in different situations? Second, how do we translate such expertise into action? In the rough and tumble of political processes, there is frequently no clear judge. Custom and power relationships usually decide whose expertise is heard. Without a theoretically based and politically supported manifesto to address these problems, a call for scientific values to 'run our lives' risks giving too much power to certain forms of knowledge.

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Dialogue between the disciplines is thriving

SIR — As an interdisciplinary group of scholars, committed to the social studies of science and engaged in a series of productive dialogues with colleagues in the life sciences, we were taken aback to be branded as "overly cynical" towards science by Harry Collins.

Contrary to Collins's view, hardly anyone in science studies rejects the values of science and expertise. We find it striking that he does not provide a single specific example of the scepticism he is talking about.

Collins does not adequately

credit the fruitful cooperation between scientists and social scientists that is a long-established reality in many universities and networks worldwide. (Last year's joint EU-US Science and Technology Studies conference in Rotterdam, the Netherlands, called 'Acting with Science, Technology and Medicine', is one example.)

In this sense, talk of a "third wave" that will be "resisted" by "post-modernists" is surprising. This is not how most sociologists think about the natural sciences: the field is already filled with scholars who are engaging scientists in conversation, collaboration and — yes — mutual critique, without resorting to the cliché version of post-modernism depicted by Collins. With backgrounds ranging from sociology to molecular biology, all of those signing this letter are committed to continuing and developing this dialogue.

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Widen the channels of communication with society

SIR — After two abortive attempts, are social scientists finally beginning to get a grip on the meaning and value of science? Harry Collins says yes. But although he correctly identifies the need for science to take its proper place in informing good government, he seems to do so in spite of his misapprehensions about scientists and the scientific enterprise. In an Essay loaded with sweeping statements and