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**Book review symposium: Hulme M (2009) *Why We Disagree about Climate Change: Understanding Controversy, Inaction, and Opportunity*. Cambridge: Cambridge University Press, 432 pp**

David Demeritt, Diana Liverman and Mike Hulme  
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## Book review symposium

Hulme M (2009) *Why We Disagree about Climate Change: Understanding Controversy, Inaction, and Opportunity*. Cambridge: Cambridge University Press, 432 pp.

### Commentary I

The reputation of climate science has endured quite a battering over the last few months. Along with the uproar over an inaccurate claim about the pace of glacial retreat in the Himalayas, which was included in the 1000-page technical report of Working Group II of IPCC Fourth Assessment Report, there has been the ongoing scandal over emails stolen and subsequently leaked from the Climate Research Unit at the University of East Anglia. Quoted selectively, these emails suggested some skullduggery by several of the scientists involved in some of the iconic temperature reconstructions quoted by successive IPCC reports. The revelations were quickly dubbed ‘climategate’ and ‘the final nail in the coffin of “Anthropogenic Global Warming”’ (Delingpole, 2009).

Such fulminations would not attract much notice beyond the feverish world of the blogosphere, except that climate policy prescriptions are often framed as the only rational alternative to the findings of climate science. Thus British Prime Minister Gordon Brown responded to the email leaks by reinforcing the centrality of the science to the 15th Conference of the Parties to the UN Framework Convention on Climate Change meeting in Copenhagen in December 2009: ‘With only days to go before Copenhagen we mustn’t be distracted by the behind-the-times, anti-science, flat-earth climate skeptics. We know the science. We know what we must do.’ British climate change minister Ed Milliband took the same line, accusing

conservative columnists of ‘playing politics with science in a dangerous and deceitful manner’ (Carrington and Goldenberg, 2009).

Rather than resolving political differences, this instrumental use of science in political debate has led to their extension by leaving the opponents with only scientific grounds for contesting policies that they actually oppose for other reasons. In the 20 years since its creation in 1990, the US Global Change Research Program has spent more than \$25 billion, making it one of largest American investments in scientific research ever, and yet the political controversy is, if anything, more bitter than ever. With Kyoto opponents attacking climate science and scientists rather than carbon taxes or cap-and-trade, we are no closer to developing any political consensus, either in the USA or internationally, about what, if anything, should be done about climate change.

Mike Hulme’s new book explains why. Climate change, he shows, typically means different things to different people. Rather than regarding this as a problem of willful misrepresentation, public ignorance, or scientific uncertainty to be resolved through improved scientific knowledge and its proper communication, Hulme argues that a multiplicity of understandings of climate change is inevitable because ‘the idea of climate exists as much in the human mind and in the matrices of cultural practices as it exists as an independent objective physical category’ (p. 28). What is striking – and significant – about that claim is less its substance and the occasionally loose way in which concepts like ‘framing’ and ‘construction’ are theorized than its provenance. After

all, cultural geographers have long insisted (Demeritt, 1994, 2002), with Donna Haraway (1992: 296), that 'Nature cannot pre-exist its construction'. But these claims have had comparatively little influence, either on the rest of the discipline of geography or on environmental politics and policy-making beyond the academy. Despite all of the talk about conversations across the human-physical divide in geography, there has been comparatively little evidence of it in actual practice. When integration has occurred, it has typically been conceived in the very narrow, physicalist terms of coupled systems modeling in which the 'upstream' physical geography sets the factual parameters for some sort of 'what if' scenario, whose impact human geographers are then enrolled to help assess and communicate outwards to policy-makers and wider publics (Demeritt, 2009).

Steeped in this tradition of predictive environmental science, Hulme offers a powerful critique of its limitations and of the problems caused by 'disconnecting climate from its cultural forms [and] framing climate as overtly physical and global' (p. 28). Hulme began his career as a climate scientist and continues, in his role at the Tyndall Centre for Climate Change Research where he was the founding Director for its first seven years (2000–2007), to make important contributions to precipitation climatology and climate scenario analysis. In 10 clearly written and accessible chapters, Hulme develops the insights of cultural and historical geographers about the importance of the social meanings of climate (Chapter One) and then discusses: how disputes about climate change reflect underlying differences of opinion about science and its findings and purpose (Chapter Three); economics and the values accorded to different priorities (Chapter Four); religion and different understanding of our place in the universe (Chapter Five); psychology and the different ways in which the risks posed by climate change are perceived (Chapter Six); media and the ways in

which climate change is communicated and understood (Chapter Seven); development and the implications of climate change and associated policies for global inequality and economic growth (Chapter Eight); governance and the politics of climate policy-making (Chapter Nine).

While the detail in each of these chapters will be familiar to specialists in those different fields, Hulme's book brings this broad suite of perspectives on climate change conveniently together into a single volume, which no doubt will prove very attractive for teaching. His scientific expertise and first-hand experience as a climate policy advisor give particular richness to his discussion of the history of climate science (Chapter Two) and its connections to politics and political action. It is this last problem that he addresses in a concluding chapter. Hulme urges us to stop thinking of climate change as single problem amenable to some kind of comprehensive solution. The multidimensionality of climate change and its complex connections to other concerns like poverty, energy security, and spiritual alienation mean there can be no silver bullet to solve everything all at once. But, beyond advocating an adaptive rather than optimizing approach to climate policy, Hulme questions whether climate change is best thought of as a problem at all. Instead, he suggests, 'we can use the idea of climate change – the matrix of ecological functions, power relationships, cultural discourses, and material flows that climate change reveals – to rethink how we take forward our political, social, economic, and personal projects over the decades to come' (p. 362). As an imaginative resource, then, climate change provides a sort mirror for reflecting upon the wider implications of those projects because '[c]limate change demands that we focus on the long-term implications of short-term choices, that we recognize the global reach of our actions, and that we are alert both to material realities and to cultural values' (pp. 362–363).

But how are we to agree about what those long-term global implications might be or make better choices about them, if they are even 'choices' at all? Hulme is much stronger on diagnosing these difficulties than on prescribing how they might be overcome. For instance, he calls for us to recognize the limits of what science can and cannot tell us, though is somewhat cagey about where, exactly, that line should be drawn. He sees an important role for science in 'help[ing] us to conduct more honest and open debates about what climate change means for us and what we should do about it' (p. 107), but in a democratic society where difference reigns that role is not the one imagined by Tony Blair (2006) in hailing the Stern report as the 'the final word on why the world must act now to limit the damage we are doing to our planet'. As Hulme suggests, there are other reasons to value the contributions of science to political debate. Quite apart from the substantive, factual contributions of science to politics, in a world where shrill shouting and political posturing pass for democratic debate, one reason for making our politics more 'science-based' might be because its values and conduct provide a model for more open, honest, and reasonable deliberation about the challenges we face in building a world in common.

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## Commentary 2

I found Mike Hulme's *Why We Disagree about Climate Change* a fascinating read. Much of the material was familiar because we share similar professional experiences and have read much of the same literatures. We were both geographers encountering climate change as students in the 1970s, but then followed divergent career trajectories as I moved to North America and always worked more in the social sciences. Our careers reconnected when I returned to England a few years ago and became a collaborator in the Tyndall Centre that Mike was then leading, but I realize now that working with Mike in his Tyndall role took time that might have included conversations about his growing interest in cultural aspects of climate change. So in place of those conversations I am now invited to contribute to this forum to discuss his book, a book that is a deeply personal reading of the shifting climate change research landscape over the last three decades and that marks what the author identifies as shifts from youthful idealism through quantitative analysis and political and religious belief to policy advice, leadership and an eventual 'cultural enlightenment'.

Delays in completing this review mean that I am now writing it in the aftermath of the UEA email controversy, the new round of attacks on the 2007 reports of the Intergovernmental Panel on Climate Change, and what many saw as the

failure of the Dec 2009 UNFCCC climate negotiations. These events make Mike's book both more relevant and slightly outdated – it is hard not to read it with recent events in mind or to seek in the book solutions to what some see as a crisis in the climate science and policy community. He sees climate risks as serious but argues that we disagree about its causes and solutions because different people see the issue through different frames and values – scientific, economic, religious, perceptual, media shaped – and propose solutions that intersect with major tensions over development and environmental governance. His solution is to understand climate change as an imaginative resource that can connect to psychological, spiritual and ethical values and thus shape a more effective response.

I suppose this is my main disagreement with Mike – his argument that solutions are cultural rather than political or economic and that climate change is a particularly wicked problem with clumsy solutions. For me, especially in the aftermath of Copenhagen, it is clear that the most important reasons for disagreement about climate change are profoundly political and linked to the interests of powerful states and actors for whom disagreement about climate change has been an excuse to delay action. Whether it is the origins of the UNFCCC in the Rio meeting, the influence of neoliberal market environmentalism, or the struggle over who controls development, I feel that the book underplays the significance of power and political economy and the role of key actors who support and oppose climate policies in the corporate or geopolitical world of nation states.

One of the themes of the book is the paralysis that can be invoked by framing climate change in terms of apocalypse, tipping points, and danger – captured in the chapter titled 'The things we fear' and the discussion of risk perception. I would suggest that the pervasiveness of this frame is actually because of the long history and media preoccupation of damages from extreme events and the associated disasters. Many of the

concepts in climate change – such as vulnerability and adaptation – come from a large literature on human response to geophysical hazards and the public is most likely to link their understanding of climate change risks to the familiar specters of floods, droughts and hurricanes.

This may just be a reflection of my own intellectual circles and collaborations but I thought it was a pity that the book does not refer to the work of some key scholars working on relevant aspects of climate change such as Boykoff on the media, Stern and Slovic on risk, or Bulkeley on governance or cities, and does not take advantage of the detailed empirical analysis of how climate change emerged onto international agendas completed as the Social Learning Project (Slovic, 1993; Stern and Fineberg, 1996; The Social Learning Project, 2000; Boykoff and Boykoff, 2004; Bulkeley and Betsill, 2005).

A more comprehensive analysis would also make more of the observation that the science-policy interface is different in each country – I am especially aware of differences between the UK and the USA – and would consider not only the role of science in national policy-making and the UNFCCC but also within key multilateral organizations such as the World Bank.

One other disagreement I have with the book, and with several of my colleagues in the scientific community, is the discussion of population. Mike suggests that it is politically incorrect or difficult to talk about the role that population growth plays in causing climate change or to propose population stabilization as a solution. He could do a better job of unpacking the demographic drivers, especially the significance of per capita consumption, but the point I wish he had made is that fertility rates have changed dramatically since he and I were geography students in the 1970s hearing predictions of exponential growth in population from the Club of Rome and Paul Ehrlich. In 1970 the world fertility rate was about 4.5 children per woman. In 2010 it has almost halved at 2.5 children per woman, with a slowing of world

population growth from 2.2% to 1.1% over the last three decades. Projections are now that rather than exponential growth world population will level off in around 2050 at 9 billion (it is currently about 7 billion – <http://www.un.org/esa/population>). Of course, more people, especially if they consume fossil fuels, will contribute to emissions increases, and if they are poor may increase those who are vulnerable to climate impacts. The point I would make is that this is one area where the drivers of global environmental change have slowed dramatically because of the choices of millions of women around the world – most because of improved literacy, health, incomes and technology and not because of coercion. Can we turn around emission paths as fast if we provide technologies and incentives that will allow millions to choose lower carbon development paths?

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### **Author's response**

One of the more interesting reactions to my book *Why We Disagree About Climate Change* has been the way in which different commentators and reviewers have sought to label the author, to place me inside or alongside particular intellectual or disciplinary traditions. Some reviews have focused on my 'climate modelling past' (in fact I have never been a modeller),

others on my work with observational climate data, while others have needed to remark (with surprise?) on my familiarity with the work of sociologists such as Beck, Collins and Latour. Others still have picked up on my political (democratic socialist) and religious (Christian) affiliations, about both of which I am self-consciously transparent. In the two reviews of *Why We Disagree* offered here in this book symposium, David Demeritt and Diana Liverman also attach their preferred labels to me. Demeritt finds it necessary to offer that as 'a climate scientist' I am 'steeped in the tradition of predictive environmental science', while Liverman observes that 'we were both geographers encountering climate change as students in the 1970s' and have 'shared similar professional experiences'.

This focus on interpreting the message of the book by understanding the stance of the author is interesting; and perhaps necessary. Indeed, one could argue that it is entirely consistent with one of the main arguments about climate change which I am advancing – namely, that what climate change means to people and to collectives can only be understood by examining the beliefs, ideologies, values and instincts that those people and those collectives bring to bear on the issue. As Sheila Jasanoff (2010) explains, climate science has produced a powerful narrative about the changing global climate, but one based on knowledge which is abstracted from 'the thickness of (culturally embedded) human experience' (p. 11). This observation, and hence the core message of *Why We Disagree*, should not be a difficult one for geographers to appreciate and assimilate.

Both Demeritt and Liverman raise substantive concerns, however, about where my analysis of climate change as an idea of near-infinite plasticity ends up in terms of human response or policy advocacy. Demeritt asks 'how do I value the contribution of science to political debate?', while Liverman is concerned that by (over?)emphasizing the cultural construction of climate

change I underestimate the role of power in the contemporary world. These are important critiques, so let me comment briefly on each of them.

The events of the 2009/10 winter of climate discontent have been remarkable. The disclosure of 12 years' worth of professional email correspondence between a number of high-profile climate scientists and the identification of 'errors' in the IPCC's Fourth Assessment Report have been seen by some as a threat and challenge to the authority of (climate) science in public life. I would argue the opposite. These events have in fact been necessary correctives to a view of climate science which has become increasingly unhelpful: that the science is settled, the consensus fixed, the necessary political actions determined. The various 'climategates' of this past winter have opened up and legitimated spaces in public discourse within which the nature of scientific inquiry and the status of scientific knowledge (about climate change in particular) have been explained, explored and challenged. It has not always been pretty or easy, but it has been a welcome corrective to the triumphant rise to political saliency and power that an, at times, adulatory coalition of interests has granted climate science over the past 20 years. Yes, I do claim that 'science can help us conduct more honest and open debates' about climate change, but only on the condition that in turn we are honest and open about the nature of scientific inquiry and of scientific evidence. This means for climate change recognizing the limits of our knowledge and recognizing when other forms of reasoning must take over.

Diana Liverman complains that *Why We Disagree About Climate Change* 'underplays the significance of power and political economy' in the framing and acting on climate change. I think she has a point; I did not do a good enough job at revealing and dissecting the various powers at work around the world. Yet one of the messages of the book is a call to repoliticize climate change,

to challenge the scientism which has placed climate change in the realm of the 'post-political' (Swyngedouw, 2010). This is a theme that other scholars have written about (eg, de Goede and Randalls, 2009; Sarewitz, 2010). That climate change is an idea that has been appropriated by various powerful actors and interests is not in doubt: the military, the neoliberal economists, the deep greens, even – as I argue – the Earth system scientists. We now see these power games opening up a new front: climate intervention technologies and the right to control the planetary thermostat (Tollefson, 2010).

The more important question is how best to challenge these interests and to reign in these hegemonies. It is not, I suggest, by using the brittle stick of science to beat them on the head, claiming 'the science demands this or the science demands that'. Clark Miller (2007) offers a compelling examination of the difficulties confronting international knowledge institutions if they are to act as a check on the exercise of unaccountable power in a globalizing world. Yet Miller's analysis is not really about the manoeuvres necessary to enable 'science to trump politics'. Rather, it is a call to resituate scientific knowledge-making about climate change (the acquisition of matters of fact) 'inside' trustworthy processes of reflection and deliberation about things that matter (Jasanoff, 2010). It is a call to co-production, a bringing of knowledge into being that recognizes the need for constant reflection and social critique to loosen things that have become prematurely or ideologically solidified.

*Why We Disagree About Climate Change* is not a manifesto for climate change policy. Events in December 2009, and beyond, have confirmed my suspicion that we have poorly, even misguidedly, framed the policy issues raised by climate change. Elsewhere I have laid out a different approach to the making of climate policy (Hulme, 2010; Prins et al., 2010). Instead, the book offers an analysis of the idea of climate change – where it came from, what

it means, how it connects material and imaginative worlds – and opens up a number of spaces where we can (and must) legitimately disagree. From reactions to the book I have received, many have found this approach helpful.

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