

Open Research Online

The Open University's repository of research publications and other research outputs

Communicating tipping points and resilience: editorial introduction

Book Section

How to cite:

Smith, Joe (2013). Communicating tipping points and resilience: editorial introduction. In: O'Riordan, Tim and Lenton, Tim eds. Addressing Tipping Points for a Precarious Future. Proceedings of the British Academy. Oxford: Oxford University Press / British Academy.

For guidance on citations see [FAQs](#).

© 2013 The Author

Version: Accepted Manuscript

Link(s) to article on publisher's website:
<http://ukcatalogue.oup.com/product/9780197265536.do>

Copyright and Moral Rights for the articles on this site are retained by the individual authors and/or other copyright owners. For more information on Open Research Online's data [policy](#) on reuse of materials please consult the policies page.

oro.open.ac.uk

7.1

Media coverage of tipping points: searching for a balanced story

Joe Smith

Introduction

Humanity tends to be fearful of change, yet change is our constant companion. What seems to be new about change is that climate science and linked policy research are indicating the possibility of abrupt and hazardous transformations. Yet change can be exhilarating if embraced with a spirit of creativity. In personal and working lives, and in business and public institutions, change is not just accepted, it is often actively sought. It is central to any notion of modernity. The media struggle to imagine or represent potential broad system changes, yet are constantly in search of apparently new 'stories'. This volume contains plenty of examples of the kinds of difficult new knowledge that climate research and other Earth system adjustments are generating. Such alterations are novel threats, and have at times, generated fearful accounts of possible futures. However, there are also many ideas, innovations, as well as long-established practices that can permit human thriving, whatever may come its way. In this chapter I seek to cover both the media dilemma of how to inform and engage yet not panic, and the growing body of optimistic research which reveals how much humanity can cope.

Here I consider the ways in which the media might limit or enable learning and debate about the causes and consequences of climate change tipping points, and of ways of adapting to them. It is written during a period of widespread 'climate change fatigue' when cynicism and suspicion infect influential portions of the media and substantial minorities of public opinion. Yet it also takes place at a time when an unprecedented body of intellectual and creative effort is going into making sense of anticipating and responding to global environmental changes more generally. In short, humanity's relationship with the non-human natural world is being dramatically revised in a very short space of time. If that isn't a story: what is?

I begin with a summary of six distinct features of the cultural politics of climate change. These are the ground-conditions for media production and consumption. I subsequently consider the quality of media performance around these issues. This includes a discussion of the scope of media coverage about, and for, those people who are most

vulnerable to the social and physical impacts of abrupt climate change. In this chapter I conclude with a discussion of how society might balance media accounts of potentially doom laden environmental presents and futures which have been at the core of environmental politics in the past, with stories from the ‘islands of successful transformation’ referred to in the final chapter. This paves the way for Emily Boyd’s chapter which looks at the scope for exercising resilience in adaptation to extreme stresses in local and more distant factors affecting the quality of living for those who sometimes are termed (erroneously) as being ‘vulnerable’. These experiences offer some insights to the ‘islands of hope’ which may benefit from more sensitive and full hearted media coverage. Paul Brown’s commentary that follows muses on the possibilities for such coverage to become more relevant for the benign aspects of the tipping points debate.

Six elements of the cultural politics of climate change

Beard sank into a gloom of inattention, not because the *planet* was in peril — that moronic word again — but because someone was telling him it was with such enthusiasm’ (McEwan 2010: 36).

Ian McEwan’s protagonist in his novel *Solar* (McEwan 2010), the Nobel physicist Michael Beard, summarizes how many people feel when at the receiving end of a lecture on climate change. Perhaps it shouldn’t puzzle us that that the promise of rapid environmental and social change is greeted with a ‘gloom of inattention’. The topic introduces a novel cultural politics whose features have gone under-recognized and unresolved. The term ‘cultural politics’ is employed here to indicate the various ways in which values and meanings that underpin economic, political, and social discourses are generated and disputed. Much of the current discussion about climate change falls between the overstated rhetoric of jeopardy, which is now having a diminishing public impact, and more sober and open-ended discussions of risk and uncertainty, which are largely unreported because they do not readily fit into media conventions.

Climate change has produced many unexpected responses, one of which resembles the ‘Stockholm syndrome’ — the phenomenon of hostages becoming emotionally attached to their captors (Tyszczuk 2011).

... We are held captive by our own fears and misgivings and yet grateful for the small mercy of continued survival... Like the hostages in the 1973 bank robbery, we have started to show affection for the thing that is trapping us (Tyszczuk, 2011: 25).

A good deal of discussion about climate science and policy has an excited, even breathless tone as it conjures images of social and ecological jeopardy, wrapped up in

sober scientific prediction. NGOs and commentators argue that devastation is inevitable unless action is taken in response to specific scientific dictats. For example, the website for the network *350.org* suggests that

350 is the most important number in the world—it's what scientists say is the safe upper limit for carbon dioxide in the atmosphere... the planet face[s] both human and natural disaster if atmospheric concentrations of CO₂ [remain] above 350 parts per million'.

Andrew Simms, who writes a monthly blog for the One Hundred Months campaign, argues that time is 'fast running out to stop irreversible climate change... We have only 100 months to avoid disaster' (Simms 2008). Insistent arguments such as these have been allied to a very simplified representation of the state of climate science. Phrases such as 'the science is finished' or references to 'the IPCC consensus' have been used to foreclose debate, so that everyone has to move on to the next stage: taking action. Indeed the notion of a 'tipping point' often functions as a rhetorical trump card (Morton 2011: 86).

Giles Foden (Chapter 3 of this volume), whose novel, *Turbulence* (Foden 2011), deals with the special significance of meteorology for the 1944 D-Day landings, suggests that there is 'a kind of hubris' in the reference to 'tipping points': 'it invests too much in human predictions of the nature and consequences and scope of the event'. He suggests that the doom-laden term might be replaced by other metaphors 'which are generative and work positively as an invitation to action'. Similarly, research suggests that taking short cuts to public attention through dramatic disaster imagery — such as photos of drowning polar bears or drought-stricken children — delivers diminishing returns in terms of political engagement, as well as carrying other costs in terms of the dignity of the subject and our relationship to it (see, for example, Cohen (2000) in relation to poverty, or Manzo (2010) on the iconography of climate change).

The phrase 'climate change' is put to work in complex ways, and the issue generates multi-layered cultural politics. This was demonstrated by the Climate Camp protestors objecting to a proposed third runway at Heathrow airport. They held up large scale portraits of potential climate victims from around the world alongside a large banner stating: 'We are armed only with peer reviewed science'. The banner was intended to underline the non-violent nature of their protest, but also sought to enroll climate science in their politically radical cause. In his pioneering examination of these issues Mike Hulme suggests that climate change has become 'an idea that now travels well beyond its origins in the natural sciences. And as this idea meets new cultures on its travels... [It] takes on new meanings and serves new purposes' (Hulme 2009). Interpretation of those meanings and purposes is made easier by acknowledging the

distinctiveness of the cultural politics of climate change. The novelty lies perhaps not in any one of the following six features, but in their combination.

The first distinguishing feature is *global pervasiveness*: climate change discussions get everywhere — from doorsteps to boardrooms — and pervade all layers of formal politics from parish and local councils to parliaments and international conference halls. It reaches across the world and across generations in ways that no other public policy concern does; even more immediate, universal, and profound themes such as poverty and injustice (though these prove to be intimately connected). The pervasiveness of the issue is frequently noted in both popular and professional contexts, but the quality of our anticipation of change would be helped by a more intent focus on how climate change poses unique ethical and political questions.

A second element is *uncertainty*, in both science and policy. Media representations in the past have more often than not failed to acknowledge that the sciences of global environmental change are not just ‘unfinished’ but ‘unfinishable’. Climate change research is not unique in this respect, but it is a particularly dramatic and important example of what Funtowicz and Ravetz (1991) have termed ‘post-normal science’. Climate change should not be responded to as a body of ‘facts’ to be acted upon (with the IPCC acting as prime arbiter). Instead it should be considered as a substantial and urgent collective risk management problem. Projecting climate change as a risk problem rather than a communication-of-fact problem helpfully deflates ‘debates’ about whether climate change is or is not a scientific fact. Such an approach doesn’t walk away from the science: rather it opens more possibilities for people to be tolerant of the unsettled, developing relations between climate science, policy and politics.

Thirdly, knowledge of climate change emphasizes the *interdependencies* between human and non-human systems, both near and far. Acknowledgement of humanity’s state of interdependence can be traced back at least as far as the depiction of city life as dependent on its rural hinterland in Virgil’s *Eclogues*, written over two thousand years ago. There have been numerous invocations of interdependence across the last century in relation to, for example, food and farming, civil rights and biodiversity. However, climate change calls up interdependence both as a description of environmental processes (e.g. relating to the consequences of the release of anthropogenic greenhouse gases) and, inextricably, as a political problem (Smith *et al.* 2007).

The potential for substantial changes in Earth systems outlined in the introductory chapters of this book force us to acknowledge that we live on a dynamic earth. It would be a mistake, nevertheless, to replace the hubristic assumption of human separateness

from nature with an account of evenly balanced interdependence between the natural and the human. Acknowledging our new place in the world includes understanding and respecting the subtle differences between truly interdependent relations and those 'earthly imperatives' which might have huge consequence for humans, but not, ultimately, for nature.

A cultural politics that is rooted in a rich understanding of global environmental change is likely to look quite different from our current state. As Nigel Clark puts it:

We are 'still a long way from the cosmopolitan thought we need, the kind that might point the way to forms of justice and hospitality fitting for a planet that rips away its support from time to time (Clark 2010: 219).

Reportage of tsunamis and earthquakes in recent years starts to hint at how media production and consumption behaviour changes may allow for fuller telling of both interdependency and dynamism in the realms of earth-human relationships.

It is also important to note that interdependency does not imply an uncomplicated convergence of interests around action. This leads to my fourth point: the cultural politics of climate change echoes a *post-colonial discourse*, by paying attention to histories of vulnerability and responsibility. The fossil-fuelled development of the last century shaped individual life chances and national opportunities for good and ill across the planet, but these chances were patterned by the pre-existing political economy of development. When Arctic Inuit assert their 'right to be cold', and Pacific Islanders argue for action to protect their land from rising sea levels, they do so in the knowledge that the threats they face have been generated by the rich world's exploitation and consumption of resources over centuries. These questions about ethics of responsibility and vulnerability serve to shift the boundaries of political community. Ultimately we are all in this together, whoever we are, and wherever/whenever we live. However, there is a danger of complacency in the assumption that climate change means 'there is no other way' and that we will inevitably 'form a global community with a set of shared beliefs', as Tim Flannery (2011) has suggested.

It seems likely that international climate change politics will become far more antagonistic in the future. The unevenness of the historical responsibility for and capability to adapt to climate change, and unevenness of experiences of environmental and social transitions (the latter introduced both by impacts and climate mitigation) seem certain to sharpen the intensity of climate change discourse. This need not halt progress on climate change action: indeed it may help to generate the 'real', honest and urgent politics that would permit climate change to feature in a more sustained way in

mainstream media.

The fifth distinctive feature is the *interdisciplinary nature* of the knowledge upon which climate change science is founded. As one climate expert remarked in 1961, ‘The fact that there are so many disciplines involved, as for instance meteorology, oceanography, geography, hydrology, geology and glaciology, plant ecology and vegetation history — to mention only some — has made it impossible to work... with common and well established definitions and methods’ (quoted in Weart (2008: 33)). The processes of the formal IPCC process represent one of the most ambitious attempts at global peer review of a specific set of questions, and draw together a very broad body of scientific research. The panel’s reports summarize an extraordinary body of intellectual achievement. However, even that process is limited by its failure to integrate adequately the social sciences, arts and humanities with practical politics. This is all the more surprising given how heavily the processes of the IPCC, as well as of the United Nations Framework Convention on Climate Change, rely on ‘scenarios’, and hence involve acts of imagination about possible futures in human as well as natural systems. I acknowledge Giles Foden’s important contribution to Chapter 3 in this regard. This raises the question of how the media can open up thinking about what it means to construct imagined futures, and the intellectual and creative work it might require.

The sixth distinctive feature of the cultural politics of climate change centres on the very particular mix of *representations* of time, and of the particular interests of other generations. Economists and policy specialists have sought ways to give future generations a voice in the present, albeit through very attenuated or clumsy proxies such as discount rates and policy targets (see 6.1). Past generations can also be heard: from our prehistoric ancestors, who coped with earlier changes in climate with doggedness, to the more recent ancestors who bequeathed inventions and discoveries that have resulted in changes both in climate and our understanding of it, such as invention of steam engines or techniques for retrieving and interpreting ice cores. Although contemporary human interests are more audible than those of the past, this expanded ethical, political and cultural community is increasingly present in our thoughts and actions. Mike Hulme says: the future ‘is a place that we all live in, in our imaginations’ (Hulme 2011: 76). This invites media experiments that allow for research, policy and politics to play in new ways with time. Just as climate change prompts us to extend the boundaries of politics in space, so it also requires that we extend them in time.

These six features — global pervasiveness; uncertainty; interdependency; the reverberations of history; interdisciplinarity; and temporality — form the cultural

foundation on which media engagement with climate change has developed and will continue to unfold. These are the conditions within which different media will absorb and re-present what we know about climate change, about future threats and our current and future capabilities for coping with them.

Climate change - media change

What do we want? ... Gradual change!.. When do we want it?...
In due course! (Armando Iannucci, tweet: 5/4/2011)

Given the demanding components of the cultural politics of climate change it is perhaps surprising that the subject has achieved any media attention at all. The issue has emerged as a topic during a period of dramatic change in the nature of media consumption and production. Despite all this the media have played a substantial role in establishing a global public imaginary concerning the capacity for everyday human actions to influence the functioning of earth systems in hazardous ways. International polling shows a steady rise in concern about climate change in the developing world, and, albeit with some fluctuation, a stable body of opinion in the developed world. A Globescan (2011) poll, for example, shows 64 per cent in the developing world and 51 per cent in the developed world viewing climate change as 'very serious'. Within the EU opinion polling in 2011 found that 89 per cent viewed climate change as very or fairly serious (Eurobarometer 2011).

James Painter's (2011) broad international study of the press coverage of science surrounding the Copenhagen climate conference of December 2009 showed a dramatic leap in coverage in the run up to the meeting. This spike was particularly significant in developing world and specifically emerging economies, with large press corps attending from China and India. Painter (2011) (p. 8) gathers evidence of a re-balancing of uneven global coverage at the conference:

India and Bangladesh had more media representatives registered than Russia and South Korea; China and Brazil more than Italy, Spain and Australia. At the very least, the numbers suggest a re-evaluation of the widely held view that news consumers in the countries most vulnerable to the impacts of climate change always suffer an information deficit and have to depend on Western news agencies.

Boykoff and Mansfield (2012) have been tracking newspaper stories featuring climate change internationally since 2004, and their graphs show a convergence over the period 2006 to 2011 between developed and developing world coverage. Painter's study of

climate scepticism has demonstrated that climate change science is currently represented more consistently in the developing world than the US, UK and Australia. Indeed developing world coverage is more firmly rooted in mainstream science and has far less tendency to report outlier views that take issue with, for example, the conclusions of the IPCC reports (Painter 2011).

Nevertheless, there is evidence that media coverage about adaptation and resilience is weakest and least frequent in the countries that are likely to experience the worst effects of possible climate change tipping points. Mike Shanahan (2009) has worked to support developing world journalists' engagement with climate change for many years, and has suggested that:

... It is a great irony that the countries, communities, and citizens that have contributed least to climate change will suffer most from its impacts. It is in these settings that the media is least prepared for the challenge (Shanahan 2009: 157).

He has summarized the specific challenges for journalists seeking to tell climate change stories in the developing world media as: lack of training; unsupportive editors; limited access to information; and the biases of selecting and reporting interviewees. Shanahan (2009: 154) notes that while there is an increasing research base in relation to English speaking and urban populations in the developing world 'there has been little study of how much reaches rural or non-literate people who depend more on radio and television, and on information in local languages'.

A notable exception is the evidence from a ten country study of awareness of the topic in Africa. This work took an original approach to sharing interviews and research findings publicly in multimedia form (BBC 2010). Given the uneven distribution of the risks associated with tipping points in the climate system, weighted substantially against those already most exposed in terms of poverty and marginal environments, this is a critical area for attention for researchers as well as for investment in media training, bursaries and knowledge exchange.

As with HIV/Aids researchers found that the most vulnerable groups have the least access to appropriate information. One significant conclusion in the report is that climate change terminology is poorly understood and often does not have standard translations in African languages. 'Existing translations apparently do not clearly convey the concept' (BBC 2010: 3). Focus groups (both rural and urban) and interviews with opinion leaders showed considerable confusion about climate change science concepts, pointing to the need to 'build simple, correct mental models of how climate change

works'. The report echoes research conducted in very different societies that emphasizes the need to 'be mindful of people's existing knowledge (e.g. in relation to trees, God, ozone depletion, pollution, and heat) which can function as a barrier or facilitator to effective climate change communication' (BBC 2010: 18). The researchers also concluded that communications should confirm the very wide experiences amongst African publics of changing weather patterns.

These researchers were exploring the state of understandings and experiences of climate change in the present. Preparing vulnerable societies, regions or groups for potential physical or related social tipping points adds a further layer to the communications challenge. However, there is relevant experience to draw upon in terms of research on information needs in the context of natural disasters. Assessments of humanitarian relief in the wake of the Asian Tsunami of January 2004 and the Pakistan earthquakes of 2005 confirm that communications should be considered part and parcel of effective immediate post-disaster actions. A review of this field found that information is a 'critical and unmet need' (Wall & Robinson 2008: 3) and that international agencies should 'treat communication equipment as a lifesaver' (Wall & Robinson 2008: 6).

The oldest of broadcast media has continued to prove its simple merits in these situations: in Aceh, Indonesia an entire radio station was installed and operating very rapidly in a converted shipping container. Radios can be distributed quickly and cheaply, and local shortwave radio can be produced at high speed in local languages. At the same time the almost universal distribution of mobile telephony has created very different but no less powerful two-way communications networks that are acutely well-tuned to community concerns. These examples of supporting populations facing sudden challenges and changes are not only pertinent to the task of responding to malign tipping points. They are also capable of supporting the free flow of knowledge, experience and questions at a grassroots level that can multiply the number and forms of 'islands of transformation' (see the final chapter).

The introductory chapter to this volume term discusses malign tipping points hence it is possible to gain some idea about the strengths and weaknesses of mainstream media by considering their coverage of disasters such as the Asian Tsunami of 2004, the Pakistan earthquakes of 2005, and the Fukushima nuclear incident of 2011. In each of these instances intense media coverage at the time of the event allows global audiences to share some understanding of the experiences of the people facing threats. These focus on human interest and struggle to communicate wider context and complexities within the narrow communication spaces available within mainstream media. There is also the

danger that these are shaped into spectacles that amount to a form of *terriblisma*; 'the strange, gratified awe one feels when beholding dreadful disasters and acts of God from afar' (Steffen 2003). Crucially, media attention tends to be short-lived, with perhaps some return to the locale or storyline at anniversaries. It is a curious but important fact that while these instances of intense media coverage do frequently seek to communicate human suffering, and point to means of its immediate alleviation (through fundraising appeals, or stories of triumph against adversity) there is a general failure to thread together experiences of such events in such a way as to support the pursuit of resilient or adaptable social systems and infrastructure. More sustained attention by the research and policy communities to storytelling, phrasemaking and visual communication around resilience and adaptability promises to deliver substantial benefits in terms of public understanding and debate.

The media have already played a significant role in spreading awareness of climate change science and policy. This is despite the fact that the cultural politics of climate change present the media with one of their most demanding challenges. However, it is not sufficient that mainstream media communicate the possibility of 'malign tipping points'. They will need to play an equally substantial role in supporting social learning and imagination about what it is to inhabit the 'benign' equivalents. For media producers, consumers and, in the context of social media, producer-consumers, to show any interest in these issues, the content will have to be as compelling as the disaster narratives of real or anticipated disasters that established environmentalism in the first place.

Imagining futures

DIANE: Stars are thick. Which star came up with the idea of using the energy stored in a lump of fossilized swamp to power the internet? Which star invented air travel, the internal combustion engine? Which star split the atom? The stars are God's mistakes. We are the miracle. Life: human intelligence: human innovation, creativity, inventions. That is why every night the stars gaze down on us in awe.' (Bean 2011: 115)

In his play *The Heretic* (Bean 2011) Richard Bean deploys a sharp and funny provocateur in the form of earth scientist Diane to puncture the slack jawed naivety of some prominent strands of environmentalist rhetoric. Diane's appeal for a celebration of human ingenuity at the close of the play can be understood as a riposte to those narratives. Faced as we are with the varied risks associated with the tipping points literature, her stance could be seen as a foolhardy over-correction. But there is something exhilarating – compelling – in her lines. To insist that mainstream media decision-makers show leadership, and 'move ahead' of the state of the political or public

conversation is to fail to understand their professional and cultural setting. To have any chance of enabling stories of adaptability and resilience, and of an imaginative preparedness for potentially sudden and devastating changes of state, requires that these become 'good stories' in the eyes of a journalist as much as in those of the policy analyst.

Giles Foden, in Chapter 3, proposes that: '(e)ffective narratives, which tend to have strong metaphors, dynamic human interest ('tension') and the ability to be abbreviated or simplified (so that they can be easily communicated), eventually begin to condition large parts of the total system'. He notes that art narratives 'can take a while to 'open' into 'ends' or become executive; and often the ends are counter-intuitive.' On this reading we might consider the 'set texts' of 1970s environmentalism, and the resonant iconography that they are associated with as art narratives. Hence the blue marble images of the earth and T-Shirts and posters featuring threatened charismatic megafauna are all the work of an imaginative and entrepreneurial movement that sought new narratives. They were trying to ask very demanding questions of a political economy that almost entirely failed to represent the interests of the non-human natural world and the interests of future generations and distant others.

Their impact has been impressive but having had 'executive' consequences in terms of the greening of mainstream political and media discourses it may now be having 'counter-intuitive' consequences. Most of environmentalism has done little new work in over a decade, and its tendency towards hyperbole, and its reliance on a narrow stock of fear-based narratives appears to have left portions of the public apathetic and fateful, and others hostile. Moreover their inhabitation of the imaginative space around environmental change has to a significant degree inhibited others from introducing different kinds of narratives. The intermittent enthusiasm for 'solutions' stories does not amount to an antidote. Rather the problem-solution dualism that is implied narrows the public conversation to handfuls of actions by a generalized 'government', or 'business', or public. It may serve to reduce one of the most substantial revisions of humanity's understanding of its place in the world to a bland and forlorn exercise in social marketing.

Environmentalism has sought to win a working global majority around to one way of looking at the world. Yet Foden argues that 'what is necessary in facing wickedly complex problems is not just one metaphor or story but many'. From a different starting point William Connolly 2002: 199). argues against 'thick universals' and in favour of 'a plural matrix of cosmopolitanisms' This plural mix is an apt way of inviting people to

engage with the range of scenarios generated by the tipping points literature. It also has integrity as a framework in which to hold the diverse human ideas, experiences and institutional responses outlined by Boyd that are relevant to coping with, even flourishing, in the face of global environmental changes.

Changes in media culture, practice and institutional forms carry pros and cons in terms of telling these stories. It is becoming harder for new stories to reach some audiences. Furthermore there is diminishing space and journalistic resource available in mainstream media outputs. Increased concentration of mainstream media outlets within fewer hands only intensifies this process, and public service media has to fight to maintain audience share. Corporate media's engagement in environmental change is fickle. For example, the News Corporation can simultaneously sustain Fox News' assault on the legitimacy of mainstream climate science at the same time as running public engagement activities in other outlets and instituting ambitious carbon reductions programmes within the business. At the same time digital and social media are opening up new places for, and means of, storytelling. Although this is allowing interests and publics opposed to climate change science and policy to organize, and then feed content back into mainstream media, the opportunities presented by this 'cognitive surplus' (Shirky 2010) are resulting in substantial gains in terms of environmental understanding and action.

The opportunities won't be taken however unless a sense of entrepreneurialism, initiative and imagination is applied to storytelling about the new knowledge humanity is gaining at the messy intersections of economic, political, social and environmental change. While environmental tipping points amount to important cautionary tales that people need to hear, they are difficult to act on, on their own account. Indeed it seems that they actually become disabling if they are the only story that people hear. There is a need for balancing narratives. In other words, the environmental research and policy community have tended to draw heavily on environmentalist 'beware of the wolf' stories that are driven by the fear of negative outcomes, and have done too little cultural work with what might be termed 'golden goose' arguments. The golden goose stories would emphasize the wisdom – indeed necessity – of recognizing the real underlying foundations of human flourishing.

There are examples of policy and economic documents that could underpin such stories. The UK Government's Stern Review on the economics of climate change (Stern 2006), and UN sponsored reports on the economics of ecosystems and biodiversity (TEEB 2010) are prominent examples of carefully researched studies of the costs of environmental

degradation and benefits of protection. They clearly demonstrate how the economy is founded on the functioning of a set of ecological systems that are barely represented in day-to-day decision-making. Media representations of this central piece of environmental knowledge remain too sparse. This is in large part because such thinking has not yet enjoyed the kinds of cultural investment that would see them amount to widely shared 'Tools for Change' (the strapline of the late 1960s Whole Earth Catalogs). These accounts need to be geographically and thematically diverse, and rooted in 'human interests' if they are to translate into a regular flow of media stories. It is helpful that Connolly's argument in favour of a 'plural matrix' maps neatly onto the characteristics and capabilities of contemporary media. The telling of diverse narratives of bold human ambition and capabilities, applied to the nurturing of humanity's 'golden goose' might move even *The Heretic's* hard-nosed Diana.

References

- BBC 'Africa Talks Climate', <<http://africatalksclimate.com/>>, accessed 10 August 2012.
- Bean, R. (2011), *The Heretic* (London, Oberon Modern Plays).
- Boykoff, M. & Mansfield, M. (2012), 'Media Coverage of Climate Change/Global Warming', <http://sciencepolicy.colorado.edu/media_coverage/>, accessed 10 August 2012.
- Clark, D.N. (2010), *Inhuman Nature: Sociable Life on a Dynamic Planet* (London, Sage Publications).
- Cohen, S. (2000), *States of Denial: Knowing About Atrocities and Suffering* (London, Polity Press).
- Connolly, W.E. (2002), *Neuropolitics: Thinking, Culture, Speed* (Minneapolis, University of Minnesota Press).
- Eurobarometer (2011), 'Special Eurobarometer 372: Climate Change', (European Commission).
- Flannery, T., (2011), 'We Will Form a Global Community with a Set of Shared Beliefs'. The Guardian <<http://www.guardian.co.uk/commentisfree/video/2011/apr/04/tim-flannery-global-shared-beliefs-video>>
- Foden, G. (2011), *Turbulence* (New York, Alfred Knopf).
- Funtowicz, S.O. & Ravetz, J.R. (1991), 'A New Scientific Methodology for Global Environmental Issues', in R. Costanza (ed.), *Ecological Economics: The Science and Management of Sustainability* (New York, Columbia University Press), 137-52.
- Globescan (2011), 'Greater Climate Concern in Developing Nations Persists', <<http://www.globescan.com/findings/?id=40>>, accessed 10 August 2012.
- Hulme, M. (2009), *Why We Disagree About Climate Change: Understanding Controversy, Inaction and Opportunity* (Cambridge, Cambridge University Press).
- Hulme (2011), 'Futures', in R. Butler, et al. (eds.), *Culture and Climate Change: Recordings* (Cambridge, Shed).

- Manzo, K. (2010), 'Imaging Vulnerability: The Iconography of Climate Change', *Area*, 42 (1): 96-107.
- McEwan, I. (2010), *Solar* (London: Jonathan Cape).
- Morton, O. (2011), 'Futures', in R. Butler, et al. (eds.), *Culture and Climate Change: Recordings* (Cambridge: Shed).
- Painter, J. (2011), 'Poles Apart: The International Reporting of Climate Scepticism', (Oxford, Reuters Institute for the Study of Journalism).
- Shanahan, M. (2009), 'Time to Adapt? Media Coverage of Climate Change in Non-Industrialised Countries', in T. Boyce and J. Lewis (eds.), *Climate Change in the Media* (London, Peter Lang).
- Shirky, C. (2010), *Cognitive Surplus: Creativity and Generosity in a Connected Age* (London, Allen Lane).
- Simms, A. (2008), 'The Final Countdown', *The Guardian*.
- Smith, J., Clark, N., & Yusoff, K. (2007), 'Interdependence', *Geography Compass*, 1 (3): 340-59.
- Steffen, A. (2003), 'Terriblisma', *Worldchanging: change your thinking* <<http://www.worldchanging.com/archives/000089.html>>, accessed 10 August 2012.
- Stern, N. (2006), *The Economics of Climate Change: The Stern Review* (Cambridge, Cambridge University Press).
- TEEB (2010), 'The Economics of Ecosystems and Biodiversity: Mainstreaming the Economics of Nature: A Synthesis of the Approach, Conclusions and Recommendations of Teeb', in P. Sukhdev, et al. (eds.).
- Tyszczuk, R. (2011), 'On Constructing for the Unforeseen', in R. Butler, et al. (eds.), *Culture and Climate Change: Recordings* (Cambridge, Shed).
- Wall, I. & Robinson, L. (2008), 'Left in the Dark: The Unmet Need for Information in Emergency Response', (London, BBC World Service Trust).
- Weart, S.R. (2008), *The Discovery of Global Warming* (Cambridge MA, Harvard University Press).