COMMUNICATING CLIMATE CHANGE: PUBLIC RESPONSIVENESS AND MATTERS OF CONCERN

Abstract

Since climate change captured global attention in the 1990s, the private individual, addressed as a member of a concerned public, has occupied a focal position in the discourse of environmental amelioration. Recently, a range of prominent books, films and television programs — for example, Tim Flannery’s The Weather Makers (2005), Al Gore’s An Inconvenient Truth (2006) and ABC TV’s Carbon Cops (2007) — have promoted the role of the individual as the 'starting point' for effective environmental action. These texts assume that the provision and comprehension of sufficient information to the public about climate change will change individual habits and practices. This accords with the 'information-deficit model' in environmental communication research, a concept that asserts a direct connection between individual awareness and response, and collective action. This paper discusses the limitations of this model, pervasive in both popular and official approaches to climate change. It will interrogate the philosophical assumptions that underlie it, in which nature and culture are polarised and the human is positioned in a certain, and separate, relationship to the non-human world — an inheritance of the very logic that enables the continued exploitation of nature. Applying Bruno Latour’s notion of a ‘matter of concern’ to climate change, where the gathering of a range of irreducible forces and im/materialities continually produce these phenomena, this paper proposes that, in thinking about climate change as essentially unrepresentable, a different mode of public engagement with the issue is asserted.

In the same month that the Intergovernmental Panel on Climate Change released its Fourth Assessment Report, presenting a bleak vision of the climate future of the Earth, the then Australian federal Minister for the Environment, Malcolm Turnbull, announced an initiative to phase out energy-inefficient incandescent light bulbs by 2009–10. According to the minister, who contextualised his decision in light of the IPCC report that had been released a few weeks earlier, ‘scientists are telling the world that we need to reduce our greenhouse emissions as soon as possible. Phasing out incandescent light bulbs is a fairly simple thing everyone can do to help reduce our emissions.’ (Turnbull, 2007) The statistics that accompanied this announcement estimated that replacing incandescent bulbs with compact fluorescents in homes would reduce emissions in Australia by up to 800 000 tonnes per year.
While applauded by some as a real initiative from a government which had spent years trying to keep climate change off the political agenda in Australia, the decision to phase out incandescent bulbs was criticised by others as a knee-jerk and narrow reaction to a growing desire amongst the electorate for action on climate change. According to Greg Bourne, chief executive of the World Wildlife Fund (WWF), the shift to compact fluorescent lights is an attempt to pass on the costs of improving national energy efficiency ‘directly to consumers’ (Frew and Bresser, 2007). We begin with this account because it indicates the terms on which, in light of the significant and wide-ranging data contained in the IPCC’s Fourth Assessment Report, the former Coalition federal government preferred to keep the discourse on appropriate responses to climate change — that is, within the realm of the private individual and the sphere of domestic consumption. Its reluctance to legislate for climate change mitigation, preferring market-driven activity to take the lead instead, found a compromise in the focus upon individual practices of consumption as a driver of social, cultural and economic transformations.

This paper is concerned with the central position of individuals and their domestic practices in discourses of climate change, and argues that the Turnbull light globe initiative was not just indicative of the former federal government’s position, but more broadly reflects the cultural framing of climate change mitigation strategies in the public sphere. Connecting the realms of private and public is an assumed flow-through of appropriate information that will translate a melange of policy decisions, scientific warnings and political appeals into altered domestic practice. This assumption is made transparent by the influence of the ‘information-deficit model’ in environmental communication theory, which asserts a strong, often simplistic link between individual awareness and collective action on climate change. What this model neglects are the contexts, or relational milieux, within which information is produced, transmitted and received. It is the insufficiency of the information-deficit model and the privatisation of responses to climate change that this paper will go on to address. Through a discussion of climate change as a ‘matter of concern’ that disconcerts a private/public boundary, we will propose a different way of thinking about climate change communication, where the essentially unrepresentable nature of the phenomenon becomes the impulse for a new kind of engagement between humans and environments.

‘Over to you’

It is unsurprising that the activities of individuals provide the focus for much popular and academic discussion of climate change mitigation (Dunlap, 1998; Hinchliffe, 1996). Macro-practices and policies for addressing climate change ultimately need the support of citizens after all, while the impact of domestic practices on greenhouse gas emissions is not insignificant. It is estimated that households account for around 20 per cent of Australia’s greenhouse emissions annually (Australian Greenhouse Office, 2007). The idea that individuals need to feel empowered to ‘make a difference’ in the face of the intensifying threats of climate change, and the snail-pace of government resolution and action, also
informs this approach. Tim Flannery’s best-selling book of non-fiction, The Weather Makers (2005), for instance, makes this appeal to its readers: ‘You can, in a few months rather than the fifty years allowed by governments, easily attain the 70 per cent reduction in emissions required to stabilise the Earth’s climate. All it takes are a few changes to your personal life, none of which requires serious sacrifices.’ His belief, outlined in the book’s concluding chapter, ‘Over to You’, is that ‘in tackling climate change the consumer is in a most fortunate position’ (Flannery, 2005: 303, 302).

In the last two years, a variety of prominent books, films and television programs have echoed this point, most notably Al Gore’s film An Inconvenient Truth (2006). Like The Weather Makers, Gore tells a multi-dimensional story of political culpability and the need for massive economic and social restructure to counter climate change, but both texts end with a call to the individual to make certain changes within their own lives. They each outline a series of domestic consumption-based strategies that the readers and viewers can act upon in an immediate way. Network Ten’s Cool Aid (2007), a program that claimed to undertake a ‘national carbon test’, took this a step further, conducting audits on the carbon emissions of five ‘ordinary Australians’ before presenting a range of ‘simple methods all Australians can implement to reduce greenhouse gases’ (ENEWS, 2007). A similar program, Carbon Cops on the ABC (2007), challenged a series of households to ‘save money and combat global warming’ by modifying their homes and domestic practices (ABC online). Informing these intervention-style ‘reality’ shows, as well as the more political, historical and narrative-driven texts of Gore and Flannery, is the notion that information provision is key to changing individual practices, which in turn will propel market transformations and government policy.

The information-deficit model in climate change research

Research into public understandings of, and responses to, climate change began in the late 1980s, with the information-deficit model soon emerging as a common explanatory frame. According to this model, the modification of individual behaviours is central to an agenda of climate change mitigation, and what drives and enables behaviour change is the provision of ‘appropriate information’ (Blake, 1999: 260). Researchers who first examined the issue of public comprehension expressed concern over a range of misconceptions held by the lay public regarding the mechanisms underpinning climate change and its main causes. In particular, researchers noted that the public tended to conflate climate change with the ‘hole in the ozone layer’, confused weather with climate, and lacked a clear understanding of how and why climate change occurs. In the early 1990s, when climate change was still a relatively new concept in public discourse, these miscomprehensions were pronounced. In one of the first studies of lay perspectives of climate change, using ethnographic interviews with 14 participants, Kempton (1991) found that the participants had little knowledge and understanding of the nature, causes and potential effects of climate change. Six years later, Gowda et al. (1997) found
that secondary school students frequently confused ozone depletion with climate change, and showed a general lack of understanding of the causes and effects of climate change.

More recent studies of public responses to climate change have continued to foreground a lack of comprehension among individuals as a key concern for mitigation strategists (Bord, 2000; Stamm, 2000). For example, a 2003 review of public opinion polls in 24 countries (Brechin, 2003) showed that the lack of knowledge and understanding reported in earlier research continued to be evidenced cross-nationally. While a review of public opinion polls from a range of countries showed that ‘the majority of publics across many nations speak of personal concern about global warming as well as on the seriousness of the problem’ (Brechin, 2003: 125), the widespread misunderstanding of the issue is still reported. More people than ever are cognisant of climate change, but domestic behaviours remain ambivalent and in many respects unchanged. This was noted by Plotnikoff et al. (2004) in their survey of 600 households in Alberta, Canada. The authors found that, although Albertans appear to be engaged in a range of environmental behaviours at home — such as turning off lights, recycling and setting back the thermostat at night — they frequently ignore energy efficiency when purchasing consumer goods, and rarely make environmentally conscious transport decisions.

Given the consistency of the findings of the research into public knowledge and understanding of climate change, it has been widely proposed that members of the lay public need to be better informed about climate change in order for them to engage in pro-environmental practices. According to Brechin, ‘better-informed citizens everywhere are more likely to shape their own behaviours [and] contribute more positively [to] protecting their environments’ (2003: 118). As noted at the beginning of this article, this belief characterises the approach taken by the Australian government (although it is not alone in this) to the issue of climate change mitigation. The National Greenhouse Strategy of the Commonwealth of Australia — which has not been revised since its launch in 1998 — states that:

Information and education programs ... complement scientific research and can foster broad community understanding of climate change issues. This understanding is a prerequisite for informed community and individual action to reduce greenhouse gas emissions and adapt to climate change, as well as building community support for actions initiated by governments. (Commonwealth of Australia, 1998: 21)

The information-deficit model suggests that people are rational, responsible actors who simply require the appropriate information in order to alter their behaviours and support policy change. It also assumes a linear passage from source to audience to action. As Macnaghten and Jacobs (1997) point out, the rationale of the model is that the provision of information is sufficient to ‘engender a sense of social responsibility’ that will motivate behaviour change (1997: 7). In studies that identify a range of factors contributing to what Stoll-Kleeman et al. (2001) term ‘the psychology of denial’ — for instance, the fear that lifestyle changes will incur...
substantial material costs, blaming the inaction of others, and speculating on the value of individual efforts in the face of climate change's enormity — information provision is championed as the means to counteract such beliefs, and promote a drive to social responsibility (Stoll-Kleeman at al., 2001; Pruneau, 2001). But can information alone really accomplish this goal? Does the dissemination of information operate in the way the information deficit model suggests? And can a sense of social responsibility be fostered by the discursive terms of the individual consumer, formed in isolation from the public realm? We will go on to consider these questions in light of the apparent limits of the information-deficit model, and the reconceptualising of participatory strategies for climate change mitigation that a different mode of public communication enables.

**Structures, institutions and relational contexts**

Despite its popularity as an explanatory frame, the information-deficit model fails to take into account a number of factors which suggest a need to rethink the work of public communication for the mitigation of climate change. These range from what Harrison et al. (1996) call the ‘practical and discursive constraints of context [that] inhibit people’s freedom of choice and action’ (1996: 215), to the narrated life of climate change, and the complex, ever-forming relations between humans and the non-human material world. A variety of studies have pointed to the multiple structural and institutional constraints on the response of individuals to climate change imperatives. Rather than the perceived ‘barrier’ to action that the lack of appropriate information is considered to be, these constraints are elastic, and emerge from the relationship between the individual and the milieu of institutions and communities in which the individual exists. Macnaghten and Jacobs’ (1997) study of public reluctance to adopt sustainable development practices points to a lack of trust in government organisations as a key point of issue. Using focus groups to explore the salience of the discourse of sustainable development, the authors found a deep suspicion of government and business sustainability initiatives, with participants articulating an extremely weak sense of personal agency in relation to environmental concerns. They report that ‘in these circumstances information … is not the problem’:

however knowledgeable people become and however concerned about the issues they are, it is the institutional or relational context which will primarily determine their behavioural response (Macnaghten and Jacobs, 1997: 21).

Bulkeley (2000), a scholar highly critical of the information-deficit model, endorses this point of view, arguing that there is a need ‘to move away from a narrow conception of public knowledge towards recognition of the complex, fluid, and contradictory nature of public understanding of global environmental issues’ (2000: 329). She points to the danger generated by a focus on individual practices of ‘shift[ing] the burden of responsibility’ in climate change mitigation from macro-economic and policy forces (and major emitters) such as government and industry, ‘to concerned individuals’ (2000: 328).
Relational contexts, of course, extend to the non-human world, and a factor informing public response to climate change is individuals’ experience of their local environment. Research indicates that individuals can find it difficult to reconcile the severity of climate change statistics with what they historically know about their immediate surroundings, and what they experience on a day-to-day level (Potter, 2005). The increasing severity of the drought in much of Australia, with plummeting levels of rainfall, has paralleled a rise in public discourse of climate change concerns. At the same time, others argue that shared experience, as much as individual perception — both shaped and generated by commonly accessed media — has a significant impact on our responses to climate change.

The information-deficit model treats information as neutral and objective: the transmission of information follows a linear process from source to subject. Yet climate change, in a very powerful sense, has a continually constituted existence in narrative, developed through means such as media reportage, but also in the many other discursive fields that frame the topic: science, policy, political economy, health, domesticity, philosophy and even theology. In this sense, climate change is the story, rather than something materially coherent that narrative merely reports upon. Trumbo and Shanahan’s (2000) survey of communication research on climate change highlights the role of narrative structure in popular media accounts of the phenomenon. As they argue, ‘issues’ or ‘facts’ do not in themselves communicate. They are made meaningful to individuals by their incorporation into story, a process that inevitably involves dramatic concerns — ‘decisions about story line, actors, and themes, which take into account the shared social realities of storyteller and audience’ (2000: 201) — and, in the act of telling, create a space of commonality in which all are implicated. Rather than focusing upon the individual as the site of climate change mitigation, this approach foregrounds cultural change in its broadest sense. It contests the assumption underlying the information-deficit model that facts can be conveyed in a straightforward fashion, and suggests that our cultural stories give shape to the real.

The mass media are frequently put forward as a mechanism responsible for increasing public awareness of climate change, particularly as the media have often been identified as contributing to common misunderstandings of climate change. Fortner et al. (2000), for example, found that members of the American public are generally trusting of the mass media, making it a valuable source of public information. Yet a different study of the impact on American public opinion of the high-profile 1997 debate over climate change found no evidence that ‘media coverage of an issue would lead to greater learning among highly educated respondents’ (Krosnick et al., 2000: 254). The uncertainties of climate change, and the largely invisible nature of greenhouse gas emissions, mean that as a phenomenon it does not easily fit a descriptive or dramatic paradigm that would otherwise mark out headline issues — what Ungar (2000) calls ‘hot crises’. Ungar contrasts the public attention captured by the hole in the ozone layer in the late 1980s and early 1990s with the relatively muted response to climate change.
globally over the last two decades. While the hole in the ozone layer could be isolated, delimited and graphically represented as threatening an ‘immediate and concrete risk’ (2000: 297), climate change is diffuse, future-oriented and lacks a focal point of recognition. To this extent, Ungar suggests, it is the work of the media, more than the subjective experience of living in the world, which generates the sense of impending climate crisis.

What is at issue here is the essentially unrepresentable nature of climate change. The information-deficit model leaves no room for the impossibility of capturing the totality of a thing. It infers that facts translate to reality. While the confused nature of environmental ‘truth’ or scientific ‘fact’ is often cited as evidence of information-deficit concerning climate change, it is also referenced by critics of this model who question the composition and mutability of knowledge itself. How can we begin to know climate change in ways that will enable its truth to be told? Brossard et al. (2004) write that the media will always frame an environmental story in a particular way, picking and choosing from certain facts and perspectives. Despite this, because of the media’s claim to objectivity — that is, presenting both sides of the story — space is frequently given in equal amounts to majority and dissonant opinions, allowing ‘even on questions … which are by consensus seen as having been resolved from the standpoint of science, voices of discord … to penetrate the discourse’ (2004: 365).

Herrick’s (2004) study of the use of scientific information in public policy highlights what he calls the ‘futility’ of expecting science to be objective. Drawing upon the philosophy and history of the discipline, he points out the ‘interpretative and socially constructed character of scientific findings’ (2004: 419), which as a result are value-laden and discursively shaped. Yet Herrick explains that, among the public as much as the policy writers, there remains an unreasonable expectation of ‘objectivity or “soundness” of scientific inputs’ to the policy process (2004: 419), reflecting a belief that truth is something inherent rather than something constructed.

This is not to say that there is no such thing as a reality of climate change. In defence of the real, Latour (2004) describes the appropriation of critical scepticism for political purpose as a significant concern for public responsiveness to climate change. He traces the deployment of scepticism by Republican lobbyists in the United States with a purpose to ‘artificially maintain … scientific controversy’ over the issue, even while ‘most scientists believe that [global] warming is caused largely by manmade pollutants that require strict regulation’ (2004: 2). As Republican lobbyists have discovered, the interests of industry are more keenly protected by questioning this consensus as publicly as possible. In response, Latour insists upon the need for the reclamation of truth, not as a political or philosophic assertion but as a ‘matter of concern’.

**Matters of concern**

Latour’s concept of the matter of concern is posed as alternative to the partiality of facts. His is an innovative view of the multiplicity of elements that constitute
the real: facts matter, but they can never tell the whole story. They assemble with other ‘ingredients’ to produce a matter of concern. We come to know a thing — an entity or force, for instance, such as climate change — through a recognition of the multiple ways in which it comes into being. As he explains, these constituents are not predetermined; thus the thing remains open to what it will become and how it will be known. Unlike a matter of fact, matters of concern cannot be explained through a single point of view or discursive frame. Climate change, in this sense, is a gathering of these different entities, issues and forces. While climate change manifests through the oxidisation of carbon and environmental transformations, its reality is equally produced in policy, economy, newspapers and the individual who installs solar panels on her roof. This is to say that climate change cannot be understood by natural or cultural frames alone; it is a nature-cultural phenomenon or, as Latour articulates, a ‘gathering’ of participants — human and non-human — which makes and maintains its existence. ‘Give me one matter of concern,’ he argues, ‘and I will show you the whole earth and heavens that have to be gathered to hold it firmly in place.’ (2004: 246)

In this light, the task of communicating climate change becomes an ambiguous one: what exactly gets communicated? How can climate change, as a matter of concern, ever be fully represented to the public? Scientific facts or instructions for improved domestic practice will only communicate so much. This, in itself, is not a problem if it is simultaneously admitted that this is so, if they are not claimed as the reality of climate change and the basis for public response. But commonly climate change is depicted in public discourse as a discrete event, identified through a mappable number of sources and concerns. Even in recent months, when erratic rainfall in Australia has frequently brought climate change on to the same page as the drought, climate change is rarely represented as a complex and unfolding gathering of forces and impacts: social health, employment, the economy, leisure, water management and deforestation, to name a few (Futerra, 2005). Tim Flannery made this point in a recently published newspaper article in which he reported on two social and environmental events connected to rising global temperatures (the decrease in circumcisions in Kenya and the death of orang-utans through wildfire in Kalimantan): ‘such catastrophes are reported occasionally in the media but the link with climate change is almost never made’ (2007: 16).

The isolation of climate change from other human and non-human, material and immaterial processes mirrors the information-deficit model’s conception of the individual which is constituted prior to its entrance into the social, and the disassociation of the domestic sphere (as a discrete locus of inputs and outputs) from the realms of industry and policy. It also reflects a bifurcated vision of the non-human world as something that exists to knowledge and perception outside of us, rather than as something with which we are caught up, and from within which we know and speak. It is this logic of human and non-human separation (instead of co-constitution) that sustains continued environmental exploitation.
In conclusion: *Hamlet's Mill* and the possibilities of the public

Despite attempts to map and know it, climate change remains an unfixed phenomenon. As a concern both material and discursive, climate change is informed by how all humans respond to its multiple nature. The information-deficit model simplifies this relationship, and in doing so denies the unfixed constitution of climate change. This is not to argue that the provision of information to the lay public is irrelevant — indeed, it is vital for a politically and environmentally literate public. However, the assumptions underlying the information-deficit model — of human rationality, the impartiality of fact, the discrete life of environmental events and the transparency of representation — obscure rather than illuminate the qualities of a gathering phenomenon that is at once natural and cultural.

Individuals inhabit cultural stories, but they are actors (and authors) within these, not merely receptors of information. Moreover, ‘information’ is not an a discrete channel of fact; instead, it is caught up in a web of policies, actions, beliefs, carbon dioxide, rising tide levels and drying wetlands, to name a few.

Is the imperative, then, not to communicate climate change — with the aim of public responsiveness — as if it were quantifiable in all its aspects, but rather to engage the public with its essentially unrepresentable reality, to implicate all of us within the im/material networks from which it constantly emerges? Climate change confounds representation because we do not stand outside of it.

*Hamlet's Mill* is a public artwork design cognisant of these ideas. Designed by the Australian artist Paul Carter, and planned for installation by the banks of the River Thames in London in 2010, *Hamlet's Mill* is intended as a publicly situated response to climate change that simultaneously, and in a contingent, incremental fashion, produces its public of response. It will do this by engaging passers-by in a continually materialising story of human and non-human entanglements that are both narrated and enacted. *Hamlet's Mill* understands climate change in terms of the sublime: ‘something so large that it overwhelms imagination’s capacity to comprehend it’ (Carter, 2007). Its ambition is to convey this sublimity, to work with analogues of environmental processes, and to acknowledge that while representation does not have the power to capture the real, it can illuminate its composition.

The impossibility of representing climate change underscores this public art project. The design of *Hamlet's Mill* will take the form of a giant pivot or gatepost sited in the river that rotates in response to the rate of global climate change. Its intended situation references the fact that recent and proposed inner urban/environmental developments in London are sited in the inundation zone of the River Thames: if sea-levels rise as predicated under climate change, these developments will be seriously threatened. LED screens ribboned through the pivot form are planned, and these will display constantly updated data on carbon emissions and sea-level rise, garnered from various monitoring sites across the globe. Communication in this context is not a straightforward process of transmitting and processing information: the data display will notate environmental change rather than ‘translating’ environmental conditions into certain meaning. *Hamlet's Mill* will bring its public into proximity with the movements of global matter — tidal
changes, Gulf Stream currents and temperature changes — as the pivot rotates, turned by the rhythm of the waters of the Thames. This is communication of a different sort, where new meanings emerge as we re-enter the story of which we are already a part.

Instead of information-provision configured as a conduit between the private and the public, here acts of discourse — as bodies, stories, matter and digital data interact — actually produce the public realm: a space in which new strategies for action emerge and political and environmental futures are negotiated. *Hamlet’s Mill* indicates how a new conceptual ground might help us to rethink the generation of public responsiveness to climate change, and the role of communication within this. There needs to be a broader understanding of what inspires responsiveness in individuals, and in turn the contexts which inform, and are informed by, individual response. Thinking about climate change as a matter of concern, within which expertise and efficacy are constantly renegotiated, and where the individual never stands outside its gathering reality, challenges the privileging of the private consumer as the key to social transformation. An always-forming public, im/materially constituted, is a much more promising source of inspiration and action.

References

——. 2007, ‘Seasons of Change’, *Age* A2, 3 November, p. 16.


Trumbo, C.W. and Shanahan, J. 2000, ‘Social Research on Climate Change: Where We Have Been, Where We Are, and Where We Might Go’, *Public Understanding of Science*, vol. 9, no. 3, pp. 199–204.


**Emily Potter** is an ARC Postdoctoral Fellow with the Faculty of Architecture, Building and Planning, University of Melbourne.

**Candice Oster** is an Adjunct Lecturer and Research Assistant in the School of Nursing and Midwifery, University of South Australia.