

Reports

Culture as Concept and Influence in Environmental Research and Management

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Abstract: *Given that human activities have been implicated in the vast majority of contemporary environmental problems, it might be expected that research effort into those activities and the attitudes from which they stem would be both strongly supported by funding agencies, and of central interest to environmental scientists and land managers. In this paper we focus on an undervalued area of environmental humanities research—cultural analysis of the beliefs, practices and often unarticulated assumptions which underlie human–environmental relations. In discussing how cultural processes are central to environmental attitudes and behaviours, and how qualitative research methods can be used to understand them in depth, we aim to address the practical challenges of environmental sustainability. Using examples from research on diverse cultural engagements with Australian environments, we aim to stimulate further dialogue and interaction among humanities and natural science scholars and practitioners.*

Keywords: culture, environment, nature, science, humanities, qualitative research, Australia

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INTRODUCTION

SCIENTIFIC RESEARCH over the last several decades has demonstrated unambiguously that ‘most aspects of the structure and functioning of Earth’s ecosystems cannot be understood without accounting for the strong, often dominant influence of humanity’ (Vitousek et al. 1997: 494). Consciousness of this knowledge is widely disseminated, yet many environmental problems continue to be intractable. Why is it that ‘often ... we get the biology right, but our conservation interventions still fail to sustain target species and ecosystems’ (Mascia et al. 2003: 649). Mascia et al. recognised that ‘conservation policies and practices are inherently social phenomena’:

‘Although it may seem counterintuitive that the foremost influences on the success of environmental policy could be social, conservation interventions are the product of human decision-making processes and require changes in human behaviour to succeed.’ (Mascia et al. 2003: 649).

We write from the perspective of disciplines, principally sociocultural anthropology and cultural geography, whose core business is the documentation and analysis of society and culture. In this report, we draw on recent Australian research into ‘cultures of nature’, i.e. sets of beliefs, practices and often unarticulated assumptions which underlie human relations with the environments in which people live. We argue that all people ‘have culture’ in that they are socialised to think about land and natural species in particular ways. Our aims are to: (1) show how socio-cultural processes are central to environmental attitudes and behaviours; (2) illustrate the sorts of contributions research on culture can make to the practical challenges of environmental sustainability; (3) stimulate dialogue between researchers in fields broadly designated as the environmental or ecological humanities (Rose 2004a) and the natural sciences, as to how we can collaborate for more effective environmental research and management.

An Australian Perspective

Our Australian perspective comes from a continental land mass with extremely diverse environments and a biota that evolved in relative isolation. It is dominated by soils of low fertility and arid climatic conditions (Heathcote 1994) and had many thousands of years of Aboriginal interaction before European colonisation (Head 2000). The process of colonisation profoundly changed many aspects of the environment (Kirkpatrick 1999). It also brought migrant groups from around the world, and thus a range of cultural knowledge to the project of life in a new land (Trigger and Griffiths 2003).

Numerous questions present themselves in this context. What can attention to culture tell us about diverse human adaptations to the range of ecological settings across this vast continent? What are the implications of Aboriginal knowledge of place, nature and landscape, developed over millennia of intimate subsistence occupation of the continent? How have British settler cultural traditions changed through interaction with Australian environments? Are there identifiable influences brought from Asia through the historical arrival of migrants and visitors from such countries as China, Vietnam and Indonesia? These themes prompt the broader question through which we frame this discussion, namely, can we afford to ignore the issue of 'culture' in understanding past and present human–environment relations, and in canvassing possible future developments (Griffiths 2003)?

The tensions between science-dominated environmental research and management and cultural understanding, and the potential for building bridges, can be seen in a number of Australian examples. In the Federal Government State of Environment reporting process, scientific research has demonstrated that the problems of environmental sustainability are significant, urgent, complex and to a high degree the product of human activity (Commonwealth of Australia 2001). Of the key responses to problems and pressures identified in the 1996 State of Environment report, claimed to be implemented by 2001, all thirteen pertain to social or organisational issues (Commonwealth of Australia 2001) (see Table 1).

However, while these same environmental challenges are also clearly recognised in the Government's National Research Priority 1, 'An Environmentally Sustainable Australia', the research goals articulated therein are overwhelmingly scientific and technological in scope (DEST 2004). The goals do recognise that finding solutions requires 'increased understanding of the contributions of human behaviour to environmental and climate change, and appropriate adaptive responses and strategies', an acknowledgement that solutions will involve attitudinal and behavioural change. In this report, we seek to illustrate the benefits of systematic and in depth research into culture for our understanding of how environmental values and practices are likely to be resilient over time, or potentially subject to change.

Interdisciplinary Engagements

Many scholars have advocated engagement between the natural sciences and humanities/social sciences with regard to environmental research (e.g. Redclift 1998; Daily and Ehrlich 1999; Pickett et al. 1999; Nyhus et al. 2002). Our intention here is not to simply restate the case, but to argue for greater recognition of qualitative cultural research on the humanities/social sciences side of the divide.

Table 1
Responses since 1996 to pressures which affect the Australian environment, as identified in the 2001 State of Environment report

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1. More legislation that embodies principles of ecologically sustainable development.
 2. Companies are factoring environmental issues into decision making.
 3. Organisations such as the Australian Conservation Foundation and the National Farmers' Federation have combined in their presentations on the urgency to repair the country.
 4. The Regional Forest Agreement process has provided increasing levels of certainty in forest management for the next 20 years.
 5. Funded programmes are emerging through cooperation of Commonwealth, state and territory governments to address many of the problems in a more integrated way.
 6. The Council of Australian Governments has set about the complex task of water reform.
 7. Australia's Oceans Policy is addressing important marine environment planning and management issues.
 8. The National Action Plan for Salinity and Water quality proposes joint Commonwealth, state and territory funding of \$1.4 billion.
 9. Natural Heritage Trust programmes have engaged almost 400000 Australians in environmental projects including Landcare and Coastcare.
 10. The commitment to a five-year budget for the Natural Heritage Trust is expected to be more strategic in approach.
 11. State government investments in new environmental programmes are often innovative and far-reaching.
 12. Vehicle emission standards and fuel quality standards, recently mandated, will ensure that air quality in the large urban centres can be maintained or improved despite a projected increase in vehicles.
 13. Announcements in 2001 that amendments are to be made to capital gains tax rules to ensure landowners who set aside part or all of their land for conservation in perpetuity will not be disadvantaged.
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Note: Summarised from Commonwealth of Australia (2001: 1–2).

There are two main areas where there has already been significant engagement. In each case there is a convergence of methodologies that has facilitated the interaction. The first example is between the fields of archaeology and palaeoecology, in both of which there is now a more dynamic understanding of long-term environmental change and the importance of human interactions. The temporal perspective is common to these disciplines and also to the historical natural sciences such as geology and evolutionary biology. It thus meshes in relatively straightforward ways with the now well-established tradition of environmental history (Cronon 1991; Grove 1995; Schama 1995). The central contribution of this work has been to illustrate the role of human agency in the long-term production and reproduction of a wide range of environments. Hence, cultural impacts are a critically significant part of environmental change over time (Zimmerer and Young 1998; Zimmerer 2000).

The second area of scientific engagement or convergence is with the social sciences through the intellectual tradition of quantitative social research. Perhaps understandably, scientists often find it easiest to work with those aspects of society and culture that are measurable, for example through attempts at

causal explanation of environmental attitudes by correlation with quantifiable variables such as age and social class. The quantitative measurement of particular beliefs or values may appear more credible to someone with scientific training than will a qualitative analysis of the same set of attitudes based on texts from a small number of open-ended interviews. Quantitative social research may support an assumption that attitudinal and associated behavioural change can be achieved through education, a goal commonly sought by natural science researchers (Tranter 1996, 1999; Kington and Pannell 2003; Marsh et al. 2000). Quantitative data such as population statistics are also more readily incorporated into systems models that are seen as integrative but are still often framed within the disciplinary language of ecology (e.g., Forester and Machlis 1996).

While we recognise the value of these collaborative trends for addressing environmental problems, this report foregrounds the other major paradigm that has informed the humanities and social sciences. This is the qualitative method of interpretive understanding that produces historical and ethnographic studies of culture and society. The research techniques of participant observation, semi-structured interviewing and analysis of diverse types of texts and images are used to elucidate the depth and complexity of human experience and sociocultural processes. The differences with science are greater in this research tradition than in the quantitative traditions, and the challenges of cross-disciplinary engagement also commensurately greater.

Cultural Research and Environmental Cultures

The concept of culture in anthropology has historically denoted a broad body of beliefs, customary behaviours and modes of social organisation that are transmitted over generations. While cultural traditions are known to be resilient through time, it is important to recognise the normality of change and adaptation to prevailing social and environmental conditions. To this extent, we might conceive culture as being actively 'made' by each generation, that is, 'constructed' by human agents rather than being produced solely by a body of encompassing traditions.

Culture, then, is seen as 'a dynamic mix of symbols, beliefs, languages and practices that people create, not a fixed thing or entity governing humans' (Anderson and Gale 1992:3). Thus the structures of daily life that tend to be taken for granted, or seen as natural, are both understood as the product of culture and also subject to human capacities to effect change over time. Nature and environment are among the most problematic of these 'taken for granted' intellectual categories, and researchers from various humanities disciplines have debated the ways ideas about nature are socially constructed, as well as the implications of this fact for environmental management (e.g. Cronon 1995a; Milton 1996; Braun and Castree 1998; Brosius 1999).

Apart from their methodological differences, the commonly held assumption that science and culture are distinctly separate entities, exacerbates three assumptions that we particularly wish to challenge. The first is the widespread notion that culture refers purely to the mythical and irrational parts of human life that are not amenable to rigorous research and scholarship. The second is the related idea that culture can somehow be contained in a black box, separable from other dimensions of life, rather than being understood as a set of processes and assumptions that pervade all of our lives and institutions, including scientific ones (Proctor 1998). The third notion is the frequent association of 'culture' with a high level of difference, especially with indigenous or ethnic minorities, rather than the mainstream citizenry. Contrary to this view, all humans have culture in the sense of a socialised set of assumptions and beliefs about the world and their relationship to it.

The relevance of culture is often easier to grasp when a group's apparent lifestyle distinctiveness is greatest. For example, most Australians would understand the relevance of culture to questions of why some Japanese eat whales, why Indonesian farmers might resist Australian scientific farming methods or why Aboriginal communities seek to manage their own lands. They are less likely to think of conservation agencies in Australia as having cultures of their own that influence the way they manage land and issues of sustainability. Here we draw on diverse examples that show how everybody has culture and everybody practices it, with significant implications for environmental behaviours and outcomes.

Some relatively sharp distinctions between indigenous and Euro-Australian (or 'settler') relations to land have been made in the last few decades (e.g., Rose 1996, 2004b). However, in keeping with more dynamic and fluid understandings of culture, it is increasingly clear that neither indigenous nor 'White' Australia is a monolithic category. Nor—with many different immigrant groups making up contemporary Australian society—are they the only ones important to consider.

The predominant relationship to land among British settlers is typically characterised as having historically been based on commodification and domestication of landscapes for largely economic purposes (Bolton 1992). Yet as with similar countries, Australia has seen the rise of an influential environmental movement that has sought to challenge the dominant view that 'conquering' nature is necessary for social and economic production of wealth (Frawley 1992; Hutton and Connor 1999). Furthermore, Australian society has always encompassed considerable diversity of approaches to nature, such that amidst widespread pro-development ideology there has also been a history of appreciation of non-utilitarian qualities of the land (Bonyhady 2000). Several case examples, based on recent qualitative studies of cultural values and practices, serve to illustrate this diversity in contemporary Australia, as outlined below.

Diverse 'cultures of nature' frequently lead to conflict over land management decisions, and the landscapes under discussion are often characterised as contested. Cultural analyses have an important role in the clarification of such land use conflicts. An instructive case is Gill's (1994) analysis of conflicts over fire management on Kangaroo Island, South Australia. He discussed the way rural islanders were marginalised by the National Parks and Wildlife Service emphasis on biophysical and visitor management. While the island's resident farmers characterised their use of fire as similar to a 'natural burn regime' in encouraging regeneration of vegetation, park managers, aiming to prevent any further post-colonisation modification of the environment, saw this as simplifying the vegetation over time. In this conflict there were thus two different views of what is 'natural' for the Kangaroo Island environment.

Such is the appeal of the idea of 'the natural' in these debates that even the mining industry, when its development ethos is challenged, can seek to position its area-specific intrusive impacts as 'natural' (McEachern 1995). The cultural underpinnings of this development ethos in the mining industry have been studied by Trigger (1997), who finds that industry professionals are committed to ideas of moral progress achieved through wealth creation. The culture of mining is shown to encompass assumptions about the naturalness of modifying the earth's topography and the associated appropriateness of civilising undomesticated landscapes.

Some of the Australian research develops comparative approaches between Aboriginal and other relations to the same natural environments, constituting an important practical dilemma as joint management regimes are being instituted over significant areas of land. Palmer (2004a) has used the term 'cultural borderlands' to examine the contested domains of Kakadu National Park, in the Northern Territory, where recreational fishers and bushwalkers both articulate different attitudes and behaviours to the traditional Aboriginal owners. While bushwalkers and fishers regard the landscape as a domain for recreation and leisure activities, Aboriginal people conceive the species and landscape as an intimately connected set of phenomena with both material resources for practical usage and an encompassing sentient spirituality. Thus, 'while Western science conceives of fish as a resource to be managed sustainably, *Bininj* (a Gundjeihmi and Kunwinjku word for Aboriginal people) view fish and their harvest not only as a significant source of food, but also as part of a wider system of interconnected socio-physical relationships and identity' (Palmer 2004b: 74).

The Australian population also contains many immigrant groups whose cultural backgrounds and resulting everyday life assumptions involve environmental management decisions. Two important ethnographic studies (Thomas 2001, 2002) undertaken by the New South Wales National Parks and Wildlife Service, examine how Macedonian and Vietnamese communities interact with National Park environments. The cultural beliefs and practices grow out of these groups' experiences and understandings of nature in both Australia and

their countries of origin. Thomas (2002) shows how Vietnam's high population density and subsistence agricultural base lead to people having an understanding of landscape as being 'imbued with social relations, personal experiences and human engagement' (Thomas 2002: 47–48). Their descriptions of the Vietnamese landscape are full of sounds, smells and people. Australia, in contrast, 'is viewed as a harsh, spacious, empty, dry continent' (Thomas 2002:128), with migrants and their immediate offspring seeing national parks as somewhat frightening and dangerous. Thomas' study also throws light on the fraught issue of fishing and shell-fishing, highly valued activities to Vietnamese Australians, but also quite tightly regulated in the context of Australian National Parks.

For the Macedonians, the landscape is also an intensely socialised place that is 'peopled', as distinct from any notion of a 'wilderness'. For both these immigrant groups, a cultural history involving the daily integration of people with the environment in village or rural life, translates into understandings of parks different from the wilderness ethic that has underpinned much of the thinking and policy underlying the establishment and management of Australian national parks. Thus, while in many parts of the world the national parks (or protected areas) ideal (a 'wilderness' devoid of people), is the linchpin of environmental management, the concept itself is culturally loaded. The wilderness ideal has been strongly critiqued in both its North American homeland (Cronon 1995b) and in its application to environmental management in other parts of the world (e.g. Zimmerer and Young 1998). For most of the Vietnamese people interviewed by Thomas, the parks of which they had experience were highly managed urban settings with playgrounds and other recreational spaces. The national park as a tool of biodiversity conservation is a very recent phenomenon in Vietnam, often associated with the forced removal of ethnic minorities from their land (Thomas 2002).

In Australia, in general terms, there has been increasing recognition that the location of environmental issues as 'out there'—in remote areas, in national parks, in non-urban places—grows out of a cultural understanding that sees humans and nature as separate entities (Adams 2000; Byrne et al. 2001). This mindset is highly problematic, not least because it diverts attention from significant environmental issues in the urban areas where the majority of Australians live. Research attention is now turning to work on urban ecologies and urban environmental cultures.

Cultural geographer Kay Anderson (1995: 275) has pointed out that '[i]t is in the suburban backyard that people, perhaps unwittingly, make their more routine interventions in nature. By clearing ground and arranging space for 'gardens', they simultaneously create habitats in which some species of ... animal [and plant] life thrive while others lose out ... suburbs have become ecosystems of their own ...'. As Tim Flannery observed in his 2002 Australia Day Address: '...[n]othing seems to rouse the passions of some Australians so much as disparaging roses, lawns, plane trees and the like.' Similarly, George

Seddon (1997: 147) has suggested that research on the significance of gardens 'offer[s] a good entry point for looking at environmental and other cultural values', because gardens 'are statements, signs ... [and] carriers of meaning' (1997: 146).

Research currently under way by the authors addresses these issues in the Australian cities of Sydney, Wollongong and Perth. In Perth, Trigger and Mulcock (2005a) are investigating how citizens conceive the notion of 'indigenity', and by implication ideas of autochthony and ferality, in relation to species of plants and animals. This involves people's assumptions about their cultivation of introduced species, pet keeping, and aims for 'nativeness' in public parks or private gardens. The research asks why certain sectors of the community value some plant and animal species over others, and how attachments to particular landscapes are given expression through modification of those places. Head's research in Sydney and Wollongong shows that attitudes and practices expressed in the domestic backyard are relevant to urban biodiversity, for example, in the extent to which native plantings provide habitat links to surrounding bushland (Head and Muir 2004, 2006). Such values and behaviours also provide insight into citizens' views about non-urban environmental debates (Trigger and Mulcock 2005b). At issue in both projects are cultural assumptions about what kinds of plants and animals 'belong' in the Australian landscape, and how these preferences interact with understandings of multicultural human belonging within the Australian nation.

CONCLUSION

Cross-Disciplinary Dialogues and the Concept of Culture

In a recent review for the Australian Research Council, Grigg (1999) usefully distinguished between three different types of implied disciplinary relationships under the umbrella of *cross-disciplinarity*:

- *Juxtaposition* or addition of various disciplines, as implied by the term *multidisciplinary*;
- *Interaction* between researchers and approaches, as implied by the term *interdisciplinary*. The *inter* here can also refer to the spaces between disciplines;
- *Transcendence*, convergence or collapse of disciplinary boundaries as implied by the term *transdisciplinary*.

These three types of disciplinary interaction have applicability to the way we think about relationships between the sciences and humanities as applied to environmental research. The sciences and humanities could remain separate silos and simply be juxtaposed, bringing multiple perspectives to bear on a particular question. They could interact, via a 'bridge' across the 'divide'. Or,

thirdly, they could be transcended, and our whole knowledge base reconfigured.

In articulating these possibilities it is not our intention to advocate any one approach. In practice, the outcomes will be overlapping rather than mutually exclusive. Individual researchers may move between different approaches at different times. Furthermore, certain disciplines contain varying degrees of cross-disciplinarity within themselves. Some of the scholars most excited about transdisciplinary approaches may also be those who would defend the distinctive heritage and toolkits of their home disciplinary knowledge. While the challenge of genuinely cross-disciplinary engagement is difficult, in our view there is considerable interest from within both the natural and social sciences. Our approach is that advancing the viability of cross-disciplinary research will best be achieved on a case by case basis in the context of specific environmental research issues and problems.

Nor are we glib about the difficulties involved, as discussed by a number of scholars (Redclift 1998; Daily and Ehrlich 1999; Pickett et al. 1999; Nyhus et al. 2002; Campbell 2005). These include issues of divergent language and modes of professional communication, possible difficulties in career progression for those involved in cross-disciplinary research, finding appropriate avenues for publication and debate, and the sheer complexity of the problems at hand. We would contend, however, that the type of ethnographic analysis illustrated in this paper can in fact be applied to these cross-disciplinary relationships themselves. Understanding the cultures of diverse scholarly disciplines and the way they frame the worldviews of research practitioners is an important contribution in itself.

Our intention in this paper has been to place on the agenda for discussion the significance of the concept of 'culture' for informing socially useful research in the 'environmental humanities' and related areas of the natural sciences. We have focused on examples of wide divergences in the 'cultures of nature' embraced across a complex society such as Australia. Nevertheless, there are indications that significant dialogues are feasible among humanities researchers, scientists and natural resource managers (Minnegal 2005). This is the goal of many of the Australian scholars whose work we have cited.

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