

ANTHROPOGENIC CLIMATE CHANGE AND CULTURAL CRISIS: AN ANTHROPOLOGICAL PERSPECTIVE

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Anthropogenic climate change is a potentially catastrophic process of planetary dimensions. The interdisciplinary domain of climate science has been in broad agreement about the dimensions of the problem and the nature of the process for more than two decades, as evidenced by the succession of reports from the Intergovernmental Panel on Climate Change (IPCC) set up in 1988 under the auspices of the World Meteorological Association and the United Nations Environment Program. The models and predictions of climate change science now inform policy initiatives in many government and non-government sectors, and have increasingly been translated into the realm of popular science and popular culture (e.g. Monbiot 2006; Spratt & Sutton 2008; Hamilton 2010; Emmerich 2004). James Lovelock has been among the major contributors to climate change science whose work has connected with wider publics. His Gaia Theory originally postulated the earth's biosphere as a single, complex self-regulating system (Lovelock 1979). Later versions of this theory have been framed more teleologically, in which the goal of Gaia is to 'sustain habitability' for life (Lovelock 2007: 33). Lovelock's insights were acknowledged by a major gathering of climate change scientists in 2001, when delegates signed a declaration that began:

The Earth System behaves as a single, self-regulating system comprised of physical, chemical, biological and human components (Lovelock, 2007: 32).

The last mentioned element of the Earth System – humans – has become prominent and controversial as evidence of the human causes of global heating from greenhouse gas emissions has grown. The phenomenon of

anthropogenic climate change is ever more salient, in politics as well as science, as citizens of the world confront the prospect of a warmed, entropic and resource-scarce future. Sir Nicholas Stern produced one of the most influential reports on the deleterious economic effects of climate change in a report commissioned by the UK Treasury (Stern 2006). Global heating and other manifestations of climate change are no longer hypothetical scenarios but are part of the lived experience of people residing in many places. The IPCC has documented a plethora of effects in every region of the world, including: enlargement of glacial lakes; more ground instability in permafrost regions; increased warming of lakes and rivers in many regions; poleward and upward shifts in plant and animal species ranges; earlier timing of spring events; and, changes to ranges and earlier migration of fish in rivers (IPCC 2007).

Anthropology can critically analyse the effects, anthropogenic causes and actions taken in relation to anthropogenic climate change by contributing to interdisciplinary and applied research and by undertaking ethnographic analysis of specific localities and groups involved in the changes that are occurring or are anticipated to occur. There is a strong tradition of ecological and environmental research in the discipline, which has antecedents in the “basic needs” functionalism of Bronislaw Malinowski (1944), the technological determinism of Leslie White’s “cultural evolution” (1949), the cultural ecology of Julian Steward (1973), and the cultural materialism of Marvin Harris (1979). While much of the earlier research was carried out in small-scale societies of the global South, the OPEC oil boycott of the early 1970s stimulated a number of anthropologists to study problems of energy scarcity and crisis in the North, particularly the USA (Wilk 2009). Household energy use practices, “folk” models of thermostats and energy costs, and environmental values were among the range of topics subjected to ethnographic study (Wilk 2009: 271-272). These researchers drew on the earlier ecological thinking in anthropology, combined with economic anthropology and the study of consumer culture that burgeoned in the 1990s (*ibid.*).

By the late 1990s, culture and climate change was an established area of study, with the publication of the compendious *Human Choice and Climate Change* in four edited volumes in 1998 (Rayner and Malone). Anthropologists continue to carry out studies of climate change in localities of the South, emphasising the necessity of understanding cultural specificity in relation to geophysical models and large scale

processes of environmental change. A notable example is the special issue of *Climate Research*, which published a set of papers from the Society for Applied Anthropology meeting in 1999, focussing on the methodological contribution of ethnography to climate change studies, and in particular the impacts on African societies of the 1997-1998 El Niño/Southern Oscillation climate conditions (Magistro & Roncoli 2001). Magistro and Roncoli argue that understandings of climate change action should be informed by anthropological analyses of 'cultural meanings, collective myths, and social memory' as well as by the large scale, quantitative data that characterise climate change forecasts generated by bodies such as the IPCC (2001: 93). Editors of a recent volume on anthropology and climate change emphasise the social justice agendas that must inform research and policy, and see anthropology as having an important role to play. They state:

...climate change is a threat multiplier. It magnifies and exacerbates existing social, economic, political, and environmental trends, problems, issues, tensions, and challenges (Crate & Nuttall 2009: 11).

The peoples and communities long studied by anthropologists – many of whom are Indigenous and/or living in postcolonial, neo-colonial and socioeconomically marginal conditions – are particularly vulnerable. As anthropogenic climate change threatens all aspects of human-ecosystem relationships, Indigenous and small-scale food producer livelihoods and cultural practices become less viable. Anthropological studies in societies of the global North also reveal the vulnerabilities and inequities for many social groups and local communities at risk from anthropogenic climate change effects. While adaptation has become the dominant rhetoric of anthropogenic climate change policy, Crate and Nuttall warn that: 'combined with institutional and legal barriers to adaptation, the ability to respond to climate change is severely constrained for many people around the globe' (2009: 10).

This paper takes an anthropological approach to the challenge of climate change in Australia, and draws on the author's ethnographic and survey research with vulnerable rural and suburban communities in the Hunter Valley of NSW. It is argued that discourses of fear and risk, scepticism and denial, as well as stances of action and apathy are constitutive of a cultural crisis set in train by the processes of anthropogenic climate change. The cultural crisis is analysed as inseparable from not only the

material conditions but also the hegemonic consumer culture of corporate capitalism. These phenomena are analysed from the comparative perspective of Ernest Becker and other cultural theorists. The ‘immortality ideologies’ identified by Becker (1973) have assumed particular forms compatible with the carbon-intensive nature of consumer capitalism as a dominant cultural system in contemporary Australia and many other societies. In this light, climate change scepticism and denial are considered as significant cultural phenomena requiring anthropological analysis. Anthropology also provides the methods to understand the broader field of climate change concern and action in specific local contexts, as discussed below in relation to the author’s Hunter Valley research.

Culture, Consumerism and Immortality

Ernest Becker’s stark analysis of the psychocultural underpinnings of human life worlds and the implications for human affairs was outlined in his two last books, *Denial of Death* (1973) and *Escape from Evil* (1975). He drew on depth psychology to argue that repression of anxiety about mortality, and perpetuation of the social collectivity are pervasive elements of all cultural worlds, whether religious or profane. In non-human species, the biological drive to “eat or be eaten” is the foundation of the quest to incorporate energy-power for survival. In humans, with their unique symbolic capacities, this has transmuted into the search for prosperity and the desire to transcend mortality, if not individually then collectively, and if not in this life then in its sequel. For Becker, ‘culture gives man [sic] an alter-organism which is more durable and powerful than the one nature endowed him with’ (1975: 3) and symbolic immortality is achieved through the “heroic projects” of culture (an idea derived from psychoanalysts such as Otto Rank, Erich Fromm and Norman O. Brown). In premodern societies, many of the heroic projects that constituted the immortality of the social group were based in religious systems that depended on the “practical technics” of generative ritual such as shamanism and totemic increase rites. These small-scale societies that lived in direct dependence on nature for subsistence evolved religions that typically embrace all of sentient and non-sentient existence in what Rose, speaking of contemporary Aboriginal Australians, has termed an ‘Indigenous philosophical ecology’ of

‘multiple, recursive connections’ (2005: 302). While these societies are now valued by environmentalists for their low carbon footprint and values of interdependence with nature, their environmental impacts were not necessarily benign or neutral (see Flannery 1994).

Becker’s theory built on the fundamental secularism of psychoanalysis as well as the cultural relativism of anthropology, in that he drew the parallels between profane and religious forms of immortality ideologies both historically and cross-culturally. In premodern societies, not just religion but many destructive activities, such as warfare and other forms of institutionalised violence, were significant forms of heroic culture. In the modern era, Becker focussed on the Christian societies of the Western world. He argued that there was effectively a transformation of religion as the dominant immortality ideology in the Western world after the Enlightenment. Christianity became repositioned in a more anthropocentric (humanist) world view, and became the foundation of a new kind of secular-humanist value system that emphasised individuals rather than collectivities, and worldly human activities rather than direct agency of the divine (Becker 1975: 69-70). Sociologist Max Weber’s thesis on *The Protestant Ethic and the Spirit of Capitalism* is perhaps the best-known articulation of this thesis, applied to post-Reformation societies of Northern Europe (Weber 1955).

While Becker did not live to see the late twentieth century development of corporate capitalism and its cultural forms, he made some prescient comments about the ‘Faustian pursuit’ of secular-humanist immortality projects, the failure of science and democratic systems to eliminate economic inequality, and the risk of planetary environmental collapse driven by unfettered materialism (1975: 69-70). Central to the analysis of the current paper is the understanding of the capitalism-consumerism nexus that prompted Zygmunt Bauman to observe that the post-industrial era is characterised by a profound cultural shift from the production-oriented work ethic so tellingly analysed by Max Weber to the ‘aesthetic of consumption’ that indicates ‘differences so deep and ubiquitous that they fully justify speaking of our society as a society of a separate and distinct kind – a consumer society’ (2001: 311-312). Bauman, echoing Becker, asserted ‘To consume also means to destroy’ (2001: 311). For Becker, this destruction is understood as an immortality project of global scale, spreading wherever the relations of commodity capitalism permeate and reconstruct social identities, in societies both secularised and religious. The secular-humanist identity project of modernity – ‘the

task of ‘self-construction’: building one’s own social identity if not fully from scratch, at least from its foundation up’ (Bauman 2001: 316) is further harnessed to the protean desires of the consumer citizen.

Consumer societies are also cultural systems that sustain the myths of happiness and immortality through values and practices of acquisition, affluence, endless exploitation of nature, novelty, and perpetual renewal. While paid work may be drudgery for many, wages allow workers to exercise expanded consumer choices that are increasingly defined and experienced as freedoms, self-actualisation and ethical imperatives. Bauman has aptly encapsulated the heroic projects of consumer societies, which revolve around:

Seduction, display of untested wonders, promise of sensations yet untried but dwarfing and overshadowing everything tried before ... Consumption, ever more varied and rich consumption, must appear to the consumers as a right to enjoy, not a duty to suffer. The consumers must be guided by aesthetic interests, not ethical norms (2001: 321).

This conceptualisation of consumer society is germane to the understanding of anthropogenic climate change as a cultural crisis in the contemporary world. Elaborate consumerist practices in the global North and affluent classes of the South (acquiring the newest, discarding the old, improving and renewing the body as a major life project, and associated rituals and beliefs) are ultimately at odds with negative messages about the future, including the spectre of a world destroyed by global heating of humanity’s own making.

Bauman’s work on consumption suggests the incompatibility of anthropogenic climate change messages with the aestheticised self-identity of contemporary consumer citizens, while Becker’s theory shows how deeply rooted the resistance to anthropogenic climate change may be through both individual repression and societal defences such as the aggressive scepticism of celebrities and political leaders, and consumption-friendly policies that increase rather than limit greenhouse gas emissions. These trends of resistance to anthropogenic climate change are discussed below.

The Cultural Dimensions of Scepticism and Denial

Scepticism and denial are increasingly visible stances on anthropogenic climate change since scientific thought has become more assertive about the inexorability of the process. The global financial crisis has doubtless also contributed to the backlash against anthropogenic climate change, and the hardships thereby engendered give ready cause for an economic explanation of sceptical positions (e.g. Gore 2010). Companies that profit from fossil fuel energy give millions to campaigns against carbon taxes and other controls on emissions.¹ The rise of celebrity sceptics in journalism, politics, science and religion in Australia and other countries is orchestrated and supported by a range of individuals and organisations with links to enterprises profiting from carbon-intensive industries and lifestyles. Mass media coverage of anthropogenic climate change is crisis-oriented, and recent high profile coverage has focused on report errors and shortcomings among climate scientists, even though these errors do not fundamentally challenge the scientific validity of the process (Adam 2010). Although the vast majority of the world's climate scientists support the IPCC's evidence for anthropogenic climate change (Anderegg *et al.* 2010) the high visibility and popular accessibility of sceptical positions, and prominent media coverage of relatively small errors and insignificant counter-trends creates confusion and doubt about the science in the wider population. As one participant in the author's Hunter Valley research commented:

We are getting brainwashed by a few scientists. We aren't getting the alternate view as we aren't reading enough of the science magazines.

In fact, the 'alternate view' is held by very few climate scientists, and there is little divergence of opinion about the basic processes in this large, interdisciplinary scientific domain.

Such opinions as the one expressed by the Hunter Valley resident above point to the hegemonic position established by groups with vested

1 For example, ExxonMobil gave almost £stg 1 million (\$1.75m) last year to organisations that campaigned against controls on greenhouse gas emissions (The Australian 2010). Greenpeace (2010) has documented \$50million of contributions by the private US oil and manufacturing company, Koch Industries, to climate denial front groups.

interests in carbon. In historical perspective, anthropogenic climate change can be viewed as a result of the high level of material satisfactions achieved by an increasing proportion of the human species since the industrial revolution. The exploitation of carbon is the foundation of much corporate wealth in which many citizens of the global North share. The consumption of the wealth from carbon (such as mass produced goods and foodstuffs from all over the world, and fossil-fuel based energy that gives modern life such ease for many) is the prerequisite of cultural inclusion and everyday pleasures in Australia and most other countries. Ernest Becker's theory adds the important element of irrationality and unconscious motivations to our understanding of scepticism and denial. In this view, carbon wealth underpins the "heroic" self-esteem boosting immortality projects of society's corporate executives, political leaders, and celebrities. The militant carbon profligacy promoted by sceptics and their supporters is a deeply denialist defence mechanism against intimations of mortality. Antonio Gramsci characterised hegemonic power relations as fluid and shifting relationships of consent more than coercion, both cultural and economic (1971). From a Gramscian perspective, celebrity sceptics would surely be counted among the organic intellectuals of the corporate capitalist class. The argument here is that sceptical discourse is overdetermined in the sense that it is sustained both by the psychocultural need to deny the fragility of human life worlds and by the capitalist imperative for endless exploitation of nature.

Environmentalists articulate positions that are counter-hegemonic but may suffer from the limitations Gramsci identified: namely, that subaltern intellectuals/activists, always on the defensive, struggle to articulate a coherent position against dominant groups (1971: 395ff). The cultural politics of anthropogenic climate change, viewed in this way, elucidate the problems encountered when advocates of amelioration attempt to replace the life-affirming myths of consumer capitalism with 'no growth' and 'steady state economy' scenarios. While growing support for renewable energy and reduced greenhouse gas emission policies – which can be part of a prosperous, more efficient economy, as proponents of 'ecological economics' have argued – must be seen as a significant shift in societal discourse initiated by environmentalist thought, the economic and political effects are still very limited in Australia, 'one of the world's carbon-fuel superpowers' (Hartcher, 2009; see also Manning 2009; Gittins 2010; Daly 2008). In Australia today, the

dominant symbolic systems, religious or secular, do not contest the life-affirming messages of fossil-fuel fired consumer culture. Indeed the new forms of Charismatic Christian denominations that are gaining adherents are often described as “prosperity gospel” (Kalder 2010).² With roots in right wing US politics, these doctrines have assimilated neoliberal values, preaching rights to unfettered market competition and freedom from government regulation. Wealth is a sign of divine favour, a precursor of redemption in the “end times” to come. The Christian message of simplicity and humility sits on the margins of the mainstream churches’ values, while those experiencing poverty and misfortune are the subaltern subjects of the churches’ parallel welfare system, in need of recuperation into affluence.

Recent Australian polls suggest that the prominence of sceptical viewpoints may not be having as significant an impact on the electorate as their stridency may suggest. Many voters favoured implementation of government policies to address anthropogenic climate change prior to the 2010 Federal election. Polls taken during the period of the election indicate that there was dissatisfaction over the Labor government’s withdrawal of the Emissions Trading Scheme (ETS) legislation in the lead up to the vote, and this was decisive in the loss of electoral support (Hartcher 2010). A similar affirmation of climate change concern and support for government action has been documented in recent US surveys (Krosnick 2010). General population attitude surveys in Australia and other Western democracies document a decline in the level of climate change concern in the last few years that seems at odds with the above mentioned electoral response in Australia to the withdrawal of the ETS. These surveys are structured however not around specific election policy issues but around questions that ask respondents to rank the seriousness and anticipated personal impacts of climate change and global warming, often in relation to other issues of concern.³ An Australia-wide poll by the Lowy Institute for International Policy found that 48% of respondents in 2009 agreed that ‘global warming is a serious and pressing problem,’ compared to 68% in 2006 (Lowy Institute for

2 Australian statistics on the growth of Pentecostalism and other Charismatic Christian denominations can be found at Australian Bureau of Statistics (2010).

3 Krosnick (2010) has convincingly argued that some of the documented decline in climate change concern can be attributed to poor construction and interpretation of survey questions.

International Policy 2009). In the USA in 2010, 48% of Americans agreed with the converse statement that ‘the seriousness of global warming is generally exaggerated,’ up from 41% in 2009 and 30% in 2006 (Newport 2010). In the Hunter Region, NSW, 64% of people surveyed in 2009 agreed that climate change would have a direct impact on their lives in the next 20 years, compared to 80% in 2006. This decline of concern is not necessarily the same as anthropogenic climate change scepticism or denial. It may be related to the reprioritising of “worry” in the wake of the global financial crisis and to the crisis fatigue factor of such a long-term phenomenon as climate change. More simply, it may be related to the experience of beneficial changes in weather conditions (*i.e.* the 2008 lifting of the severe drought in NSW and extremely hot dry days that accompanied it) that has also been well documented in international surveys as shaping people’s views on climate change (Krosnick 2010).

The complex and apparently contradictory domain of popular climate change thinking, as exemplified in mass media coverage, polls and surveys discussed above, raises specific questions about the cultural meaning of anthropogenic climate change, and perceptions of threat and risk, that are amenable to qualitative and ethnographic study in specific localities and communities.

Anthropogenic Climate Change and Hunter Valley Residents

Climate change is a process that is almost designed to create apathy or scepticism (in that it is not readily perceptible, and has a long time frame of occurrence and many distant effects). However in many localities, environmental changes (in weather, seasonal patterns, water supply, species distribution and crop cycles) have become an experienced reality with deleterious effects all too apparent. The author and colleagues have been studying social and cultural impact of climate change in rural and suburban Hunter Valley communities since 2008.⁴ The methodology for

4 This research is funded by Australian Research Council Discovery Project DP0878089 (Climate Change, Place and Community: An Ethnographic Study of the Hunter Valley, New South Wales), as well as by the University of Newcastle

the study includes a longitudinal survey of residents' attitudes and practices concerning climate change, and ethnographic fieldwork in selected localities, organisations and groups of three areas: Upper Hunter (rural and heavily coal-affected), Lake Macquarie, and Newcastle (sub/urban, coastal). The broad research questions that inform the study enquire into the lived experience of climate change and global heating; construction of and actions on climate change in contrasting local communities and groups; the understandings of landscape and the biophysical environment in relation to climate change; and the relationships between different community structures and place-based political actions that are arising in response to climate change.

In a 2008 survey⁵ carried out by the author and colleagues, 1162 rural and suburban residents in three Hunter Valley locations (Upper Hunter and Lake Macquarie – the latter divided into households from high risk suburbs and controls from non-high risk suburbs – were interviewed by telephone about: their observations and interpretations of natural events in their area (storms, drought, hotter days, fires, loss of species, changes to seasons); their level of concern about these changes; their concerns about climate change impacts in the future; actions they are taking to reduce climate change effects; and ethical values about the environment. At the end of 2008, 30 - 60% of respondents in the three areas were observing a higher frequency of weather conditions that are considered core climate change indicators—heat, drought, more intense bush fires and storm/flood severity. When asked about loss of native plants and animals/fish, there was a strikingly similar pattern of answers in the three areas, with 30-40% of respondents observing species loss. However, a significantly larger proportion of Upper Hunter people observed mature trees dying (55% vs 30%). The majority of survey respondents (55-75%)

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- 5 Respondents were randomly chosen within three groups: Upper Hunter residents, "in town" and rural households (total 385 respondents); Lake Macquarie households in suburbs at high risk of sea level rise and storm inundation (395 respondents); and a Lake Macquarie control group, not in risk suburbs (382 respondents). Demographically, respondents across all areas tended to be older (median age 52-61 years), were long term area residents (median 20-27 years), and female (55-63%). A lower proportion of the Upper Hunter sample were retired (26%) compared with Lake Macquarie high risk (44% retired) and control areas (34% retired). The survey was carried out by Hunter Valley Research Foundation using in December 2008. The second survey will be undertaken in February 2011.

witnessed changes in seasonal patterns and the usual rhythms of nature, while about 27% of Lake Macquarie residents noted sea level rises along sea or lake shores.

Almost 70% of respondents had concerns about adverse natural events over the next 20 years, and Upper Hunter rural residents were very concerned about hotter days and droughts. Nearly all respondents considered a number of climate change impacts to be likely over the next 20 years, including: increase in council rates; heat stress; rise in cost of insurance, food and water; community disagreement about how to deal with climate change; hardships for low income people; loss of plant/animal species; and, for Lake residents, low lying properties being flooded more often. Differences in perceptions of impact emerged among high risk Lake Macquarie residents, who saw a greater likelihood that their property values would decline (51%) along with their household's economic well-being (67%). In the Upper Hunter, almost 80% of residents predicted farmers being forced off their land.

While awareness and concern about adverse natural events and future impacts are notable in this sample of Hunter Valley residents, they do not necessarily attribute these changes to anthropogenic climate change. Almost 50% (567/1162) of respondents made optional comments at the end of the survey. The most commonly recorded comment (102/567 or approximately 18%) was the invocation of "natural cycles" or "natural cyclical change" to explain changes in weather patterns or to argue against the idea of anthropogenic changes, as the following quotes exemplify:

I reckon climate change is a natural cycle. We move from one ice age to the next and that is our natural cycle.

When I was young and at school we were taught that these changes come automatically. We were told the equators were once frozen, so changes are going to happen. It is just nature and there is nothing we can do about it.

[Climate change] has not affected anyone yet, mostly just natural cycle. We will know in 100 years whether it is happening.

Climate change is part of the natural rhythm of the earth and plants and animals have always had to adapt.

While such views do not deny the reality of climate change, they are sceptical of its human causes. There is an emphasis on a non-linear view of time that counteracts the purportedly dominant linear orientation of Western time constructs, and perhaps more significantly the linear trajectories of Apocalyptic cosmologies.

Some 'natural cycle' commentators were nonetheless committed to saving the planet, as the following quote illustrates:

Basically I think climate change is a cyclical thing and I do not think that we can do much but we should be *looking after the planet* that we have got to the best of our ability by saving resources recycling and reducing energy use.

Stronger sceptical views (ie. doubts about, or outright disbelief in, climate change) were expressed by 79 commentators (14% of comments). Arguments by those who expressed sceptical views about climate change included: not enough evidence, or conflicting opinions of scientists; geological or other records do not support climate change; physical evidence from the past not in tune with scientific explanations; exaggeration or scaremongering about climate change. The following are illustrative comments:

Load of crap... world going through a cycle ... kangaroos need culling ...wild pigs are a problem ... foxes and rabbits are a problem ... greenies are stuffing the country. If we get rid of the coal Australia will be stuffed, it helps the economy.

I just feel that they are pulling the wool over our eyes a bit, the government.

I think climate change has been sensationalised by people like the Greens and the media and people are over reacting. Federal and local governments are using it as an excuse to charge people unnecessarily and to travel overseas at taxpayers' expense.

The following commentator combined two sceptical arguments in the one comment: his lived experience of the environment, and cynicism about government motives in endorsing the climate change evidence:

I don't believe there is a climate change. It is just a phenomenon of the natural climate changes that we get. I live on the water and I notice the water is lower than it used to be. I also believe the government is using climate change to get more taxes from us.

Some comments strongly reinforced the frequent survey responses (30% to 75% depending on area and phenomena observed) regarding changes to the natural environment that gave reason take climate change seriously:

I think it has been very obvious in this area. We moved up there 30 years ago. They have seen a dramatic change: hotter years, less rain, different species of plants have come into the area.

I have noticed birds breeding earlier and it turns you off walking because magpies are out earlier.

Only that it's already here and we are a bit late doing anything about it. We are on a horse stud property - already seeing the impact of it. The breeding season of horses is affected by the drought because the drought has affected the pasture ultimately affecting the property.

Direct experience of changes to weather and natural environment appear to be a strong indicator of climate change concern, which may or may not be associated with affirmation of anthropogenic causes. In the northern hemisphere, the cool wet weather conditions of 2008 (with the coolest average earth temperature since 2000) appears to have contributed to a decline in climate change concern, but as Krosnick (2010) points out, this response may well be temporary as earth temperatures continue the overall warming trend.

Future Action

The leadership challenges of a constructive response to anthropogenic climate change are considerable. Most political leaders in Western democracies have failed to meet the political challenges of anthropogenic climate change, being themselves hostage to the vested interests of carbon-intensive economies and the cultural values of consumerism, market competition and resource intensive growth. Major international political initiatives have not met their core goals, or have been inconclusive, as the 1997 Kyoto Protocol, the 2009 UN Climate Summit in Copenhagen and the 2010 Convention on Biodiversity Conference demonstrated (Mander 2010; Monbiot 2010). This is despite the ongoing momentum of the IPCC and many organisations and agencies directed to scientific understanding and policy innovation on smaller scales.

Surveys of people in affluent societies show that these consumers of high-carbon lifestyles have already made, or intend to make, some changes to their way of life at the household level (Krosnick 2010). The majority of people surveyed in the Hunter Valley (almost 70%) were already taking some action to reduce climate change effects. Patterns of action did not vary in the three study areas. The majority of respondents said they were already taking steps to: reduce home energy and water use; change buying habits; and, grow drought resistant plants. About a quarter of respondents said they were seeking further information about climate change before making decisions, were modifying their homes to avoid flood damage (in the Lake Macquarie high risk suburbs only), and were encouraging action within organisations of which they were members. These responses were also expressed in the optional comments. There was an emphasis on better education for communities, sustainable living and less energy use, as the following comments illustrate:

People should use less resources, which I don't think many are doing right now. People are buying too many unwanted things and they should stop blaming government and other authorities.

People just take it for granted that it's not going to happen. We need more info, more seminars for the ordinary people so they understand how important it is.

All of my Christmas lights are operated by solar power. More people should be using solar power.

Actions that few respondents endorsed included changing jobs or becoming involved in protests or climate action groups, although 40-45% said they were changing their travel habits and taking individual action such as writing to authorities. About a quarter of respondents said they were seeking further information about climate change before making decisions, were modifying their homes to avoid flood damage (Lake Macquarie high risk group only), and were encouraging action within organisations of which they were members.

These findings broadly conform to the findings of the Hunter Valley Research Foundation's annual surveys of residents' environmental attitudes. In 2009, the large majority of 323 randomly selected Upper Hunter respondents reported they were already making efforts to reduce energy use (90.2%), water use (83.4%), and the amount of rubbish

produced (84.3%) in their homes. Only 6% said they had written to a newspaper, local council, or government department about an environmental issue, and only 2% said they had taken part “in a rally or protest about an environmental issue” (Hunter Valley Research Foundation 2009b: 10). Survey results for the entire Hunter Region survey were similar, with a small but slightly larger minority saying they engaged in letter writing or rally participation, and a large majority saying they engaged in a range of household sustainability measures (Hunter Valley Research Foundation 2009a: 8).

These actions by householders suggest a willingness to change some everyday practices where not constrained by issues of cost and feasibility (such as changing jobs or using public transport in rural areas). They also suggest that there are sufficient concerned citizens to exert pressure on government climate change policies and, as in the US, the evidence seems to be that there is an unusually high level of agreement on the need for action (Krosnick 2010). In the Hunter Valley, the level of government that has proven most responsive to climate change risk is the local councils, who are responsible for much of the municipal planning, building codes, local infrastructure and a range of community services. Lake Macquarie Council, with thousands of households and coastal zones at high risk of sea level rise by 2100, has adopted proactive policies including extensive environmental education, a ‘Sustainable Neighbourhoods’ program, and a range of flood, sea level and natural disaster preparedness plans, as well as waste minimization, landcare and carbon footprint reduction schemes. The number of concerned residents in these high risk areas is relatively large and cohesive compared to other areas where there is no widespread perception of personal or household risk.

The author’s research with civil society groups active on environmental issues in the Hunter Valley found that beyond the household, people will mobilise politically around specific issues of community concern. These most notably are threats to land (as a source of identity, Indigenous and non-Indigenous), property values and livelihood, and health (especially the health and welfare of children). Examples of recent issues that have created local protests, action groups and organisational alliances include the Southlakes Communities against the Mine (SCAM) opposition to the Centennial Coal Company’s Awaba coal mine open cut extensions on the grounds of air pollution, children’s health and environmental damage; the protests against the Anvil Hill/Mangoola mine in Wybong (Connor *et*

al. 2009); ongoing resident coalitions to fight cumulative air pollution, water source destruction and adverse health effects from intensive coal mining in the Singleton/Camberwell area (Australian Broadcasting Corporation 2010; Higginbotham *et al.* 2010); and the Hunter Thoroughbred Breeders Association campaign for a moratorium on new mining and coal seam gas development in the Hunter Valley.

While the state government, industry and trade union endorsement of unrestricted mine expansion in the Upper Hunter valley continues unabated, there have been important tactical victories in these local struggles, many of whose proponents have joined forces with climate action groups (see Connor *et al.* 2009). Some of the successes include electoral changes (e.g. voting out a state Labor member in the Lower Hunter who was perceived as insufficiently supportive by Southlakes residents fighting a coal mine development); more representatives from local environmental action groups elected to local government; drought-resistant farming practices; sustainable lifestyle initiatives such as Transition Towns; and citizen legal challenges (such as the successful citizen challenge in the NSW Land and Environment Court on the basis that the Anvil Hill coal mine environmental assessment did not include an assessment of the ‘indirect emissions’ associated with the use of the resource) (Gray v. The Minister for Planning and Ors [2006] NSWLEC 720. 2006).

Many community actions are not overtly political, nor are they intended to be. They are on the margins of the environmentalist organisations, and most participants would reject a cultural or political identification as environmentalist (or “greenie”, which is used as a very negative epithet). But the net effect of these actions would appear to be a sustained and enduring shift in civil society, with an intensifying consciousness of the need to address negative environmental change as it is experienced, not as party politics or scientific debates. Coalescences and shifts in political processes will inevitably come from this, and many unlikely but productive alliances have already been made in particular struggles in the Hunter Valley (‘blockies’ and horse breeders, farmers and conservationists, climate action groups and local councils, and so on). In the past five years, the author and colleagues have observed a significant broadening of discourses about land, nature, water and “the environment,” even among people for whom “climate change” is an alien word.

Becker noted that humans are unique among sentient creatures in their capacity for both symbolic and organismic expansion. The attraction to beauty, goodness and perfection, and recognition of its joyful expression in all of nature, is a countervailing “ontological motive” to competitive survival, domination and satiety (1973: 150-155). Environmentalism focused on preventing the worst disasters of anthropogenic climate change constitutes a large field of social action inspired by the cultural imagination of new immortality projects that do not destroy the Earth System. Although often described as a “movement” by activists, this social field is diverse, diffuse and conflictual. In the frequent talk of the “climate change movement”, activists and environmentalists are articulating a social imaginary of a world they wish to bring into being rather than a contemporary social reality. Leaders are not part of the dominant political economy, but represent a diverse array of minority political parties, environmental organisations, transnational alliances, action groups, and local networks. Attending to, and supporting, this diversity of action (and intensifying its effects) is an important task. In this process, it is timely to cultivate an anthropologically informed understanding of cultural change and political critique as well as a politics and science of climate change.

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