Reconsidering nature and accountability: the possibilities of strategic postmodernism

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CHAPTER SEVEN

NAMING THE PROBLEM: THE EFFECT OF DISCOURSES OF NATURE AND ENVIRONMENTAL ACCOUNTABILITY ON THE DEBATE OVER CLIMATE CHANGE

Climate change has emerged as the most prominent of the global environmental issues, and for good reason: none of the others is as inescapably linked to economic growth at such an expansive scale and detailed scope (Sagar & Kandlikar, 1997, p. 3139).

This chapter will synthesise the theoretical developments of the previous chapters whilst focusing on international climate change negotiations. As I argued in chapter three, discourses function to frame meaning and although struggles to solidify meaning are ongoing, it is possible to explore how these are operationalised to perform and legitimate certain ‘actions’ and ‘solutions’. The focus placed on discursive practices helps to illustrate the role they play in determining “what can and must be said from a certain position within social life” (Eagleton, 1991, p. 195). I have chosen to focus on this mainly because I was disturbed by the ability of Australia to negotiate an increase in greenhouse gas emissions at the Third Conference of the Parties to the United Nations Framework Convention on Climate Change in December, 1997. As a result, I wanted to find out more about how such a negotiation is framed and how discourses of accountability can operate in a way that actually seems in conflict with the desired outcomes of international climate change negotiations. From this starting point many other issues emerged, and these will be considered and revealed in the following chapters.
The possibilities of environmental accountability have been discussed and highlighted in the previous chapter in which it was argued that the philosophical, ethical or moral dimensions of accountability should be highlighted in any accountability process. This is also true in the development of international policy on climate change where the procedural and technical dimensions will be shown to have been privileged. Pursuant to the argument developed in the previous chapter, environmental accountability will be shown to be narrowly interpreted, whereby functionalist goals obscure 'multiplicity' in the struggle to solidify 'meaning' in these debates. This is an approach that is particularly apparent in the construction of two 'texts', the Kyoto Protocol and Australia's policy responses (which will be explored in the following two chapters).

The aim of this chapter is to provide a background to global warming issues, considering the history, science and politics of the debate in order to facilitate and frame the discussion of particular texts in the following chapters. These will be discussed in light of the expanded interpretation of environmental accountability adopted in this thesis. At this point some of the limitations of this approach will be identified and the theoretical importance of the approach adopted will be discussed in light of these limitations.

1. LIMITATIONS ACKNOWLEDGED

In a broad sense, all knowledge is a matter of perspective...While this knowledge usually "says something", it also leaves a great deal unsaid (Morgan, 1988, p. 477).

1 Although I did not define accountability in the previous chapter, I did suggest that it should be 'more than' procedural accountability and I emphasised the need to include the ethical and moral dimensions.
The point raised by Morgan (1988) is often made in relation to 'mainstream' approaches to knowledge construction, however they are also relevant to alternative perspectives and are just as relevant in critical or postmodern approaches to knowledge development. One major difference lies in the willingness, or lack thereof, to acknowledge this as an inevitable part of 'coming to an understanding of the world' (Gare, 1995). In response to this it has been suggested in previous chapters that the lack of closure, along with the partiality and ambiguity of the research process is not only inevitable, but may also be desirable (Lyotard, 1984; Seidman, 1994; Lemert, 1997). This means that the fractures and disjunctures associated with construction of a narrative, discourse or text are illustrated instead of being hidden from view. This approach offers a challenge to work that seeks to find an absolute 'truth' about the reality of the world that is described or analysed. To reiterate,

postmodern texts construct different realities, thereby undermining the sense of there being a privileged reality, or the sense of reality as such (Gare, 1995, p. 27).

It is important to make it clear that the synthesis offered in these chapters is not the 'central' or 'grounding' aspect of this thesis, as the main focus has been to explore the assumptions that are made in environmental accounting and accountability debates about 'nature'. The central aspect of this work has been to illustrate that even well-meaning attempts to deal with the environmental crisis reinscribe the same underlying assumptions of the problem(s) in the solution, namely that 'nature' can be known and can be a stable category for debate irrespective of its historicity and context (culture, gender, class).

It is acknowledged that the issues raised in this chapter are a limited synthesis of the complex theoretical and methodological perspectives
developed in the previous chapters, however, it does provide a focus that enables the theoretical implications of a 'postmodern' approach to issues of environmental accountability to be seen in light of a particular environmental issue. There are numerous implications of adopting this approach, the most important of which challenges the assumption that there can be no postmodern praxis (Yeatman, 1994). This calls into question the assumption that postmodern approaches are not of strategic significance in understanding pressing environmental issues, or in the development of (accountability) responses to these in order to negotiate path(s) out of potentially catastrophic biospheric events (Yeatman, 1994; Gare, 1995; Jagtenberg & McKie, 1997; Lemert, 1997).

In order to create a meaningful synthesis of these developments in relation to the climate change debate I will now outline how and why climate change is one of the more pressing and pervasive environmental problems that threatens the ongoing survival of the planet.

2. WHAT IS CLIMATE CHANGE?

As I am not a scientist, when I began reading the climate change literature, I found the literature exceedingly difficult to understand. So at the risk of simplifying complex scientific issues, climate change is a term that refers to changes in climatic conditions, indicated by such things as rising temperature, unpredictable weather patterns or changes in seasonal attributes such as monsoon periods. It is generally used to refer to 'abnormal' changes, not seasonal or periodic changes.

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2 It is ironic that a thesis that has attempted to provide a critique of the impact of science (and other dominant discourses) on notions of nature now rests on that very discipline. Although this, and the remaining chapters does point out this irony, it is important to remember that the location of this thesis is within the terrain of strategic postmodernism. This being a particular interpretation of postmodernism that does not radically depart from the influence of 'modernity' but attempts to critique and expose its limitations. Such an irony, within this context, should not go unmentioned.
(such as the *el nino* effect). In this sense, 'abnormal' is directly linked to the effect of human activity on global climate, perpetuating the distinction between culture and nature that I have explored in chapter five. The greenhouse process has been described as the accumulation of excess carbon dioxide in the atmosphere lead to climatic instability, and eventually the warming of the earth. Visible sunlight passed freely through the earth's atmosphere, but the portion of this sunlight that is re-radiated outward as heat is partially blocked by a combination of atmospheric water vapour and carbon dioxide (Tokar, 20th April, 1999, www.zmag.org/zmag/Dec97Tokar.htm).

As carbon dioxide\(^3\) levels increase the more heat remains within the earth's atmosphere, changing and warming the climatic conditions of the planet. This is experienced globally, but it also differs within regions. For instance, areas may receive an increase in rainfall, whilst others may experience drought. It is also a problem that has not been created evenly, whereby different groups and nation states have contributed to greenhouse gas production differently, with some countries and within those countries, some industries, contributing more to the problem than others (O'Riordan & Jordan, 1996).

Although it is impossible to identify exactly 'who is' responsible for rising global temperatures, the generic category of 'human' has been used in order to trace responsibility, and the nation-state has had to take responsibility for their citizens ongoing contribution to the greenhouse effect. As climate change will not discriminate based on per capita contribution, it is a global issue, yet it is also an issue that requires a complex analysis of who is and who should be held responsible.

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\(^3\) The many other greenhouse gases such as methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons and sulphur hexafluoride identified in the Kyoto Protocol, Annex A, 1997.
accountable in an abatement process (O'Riordan & Jager, 1996). Although the effects of climate change are pervasive and will likely continue for a long time into the future, complex intergovernmental institutions have been charged with this responsibility and the negotiation of accountability within this context has proven difficult (O'Riordan & Jager, 1996).

3. CLIMATE CHANGE AND ENVIRONMENTAL ACCOUNTABILITY

The literature on climate change has been described as "congested and voluminous" (O'Riordan & Jager, 1996, p. xii). As O'Riordan and Jager's (1996) work was not about 'climate change' per se, but the politics of negotiating 'nature' at a global level, this chapter follows in a similar vein. I have identified three main areas that will be discussed within the remainder of this chapter, these include a discussion of history, science, and political dimensions of climate change. This performs a dual function. It provides a broad background for the discussion that will occur in the following chapters and also draws on the ideas developed in previous chapters.

Experimentation with processes of international environmental accountability could and should be a dynamic process inclusive of a diverse range of alternative options as to the development of accountability in what is a new era of global environmental dilemmas. Generally it is agreed that there are three main determinants of successful international responses to global environmental problems, all of which are contingent on the facilitation of accountability mechanisms.

4 Generally, climate change negotiations rely on a distinction between the developed and the developing world's responsibility.
Levy et al (1993) summarised these into three main points. This first is a genuine concern for the issue on behalf of the respective government's participating in the agreement. This would be influenced also by the concern mounted within the broader community. This in turn would be influenced by the discourses of nature that are manifested within a diverse citizenship (including gender, race, culture, geography, access to resources, the economic make up of the nation). The second is the degree to which compliance can be ensured, monitored and measured. This is a function of the accountability procedures that are agreed to, and also the ability of respective nations to have access to the resources that enable such accountability. And the third is the extent to which respective nations can deliver the policies that are required to meet the stated aims. This to a large extent will be dependent on public opinion, the internal lobbying and negotiation process of a nation and also the ideological position of the particular government charged with such a responsibility. It should also be remembered that successful achievement of the goals set out in international agreements by no means reflects the successful abatement of the potentially catastrophic effects of climate change.

Although the international complexities of environmental accountability are only beginning to be studied within the accounting literature, there has been some debate over the general role of different notions of accountability. These have been discussed in the previous chapter, and there is an increasingly diverse spectrum of opinion, including the view that accountability can be used to perpetuate hierarchical social relations, providing the means through which owners of capital can continue to make self-serving decisions under the guise of transparency and openness (Tinker, 1985; 1991; Tinker et al, 1991). There is another view that existing social practices should be extended to include more information in the discharge of the accountability responsibility (Gray,
1992). And further some have argued for a shift away from old modes of analysis and institutionalised thinking to encourage ‘new’ environmental accounts and challenge the validity of established accountability relationships (Hines, 1991; Maunders & Burritt, 1991; Cooper, 1992). To this I suggest that accountability should always be contextualised within the discourses that have allowed it visibility, and through this contextualisation the ongoing effects of environmental and social ‘realities’ can be seen in relation to subject positions rather than meta-narratives. This in turn suggests that they will always be under review, challenged and forced beyond superficial and ideological efforts towards closure. This encourages a recognition of subjects (as alive and embodied) of accountability rather than the objects of accountability (reduced, deadened and disembodied) (Covaleski & Dirsmith, 1995).

Covaleski and Dirsmith (1995) deal with these issues to some extent within their article “The Preservation and Use of Public Resources: Transforming Immoral Behaviour into the Merely Factual”. Although this paper focuses on an American example of how accounting can be used to justify an ideological political position, they deal substantially with the complex role and accountability function performed by governments. They wrote that the objective of the particular political situation they analysed was to

scientize the performance of the stewardship function in the preserving, using and reporting upon the state's resources (Covaleski & Dirsmith, 1995, p. 147).

Although this paper does not deal with inter-governmental organisations or environmental issues, Covaleski and Dirsmith (1995) trace the way that the objective stance developed by government has been used to illuminate decisions as ‘factual’ whilst marginalising the moral dimensions of both governance and social, political and economic negotiations.
As research into international environmental accountability has been limited, and where it has been discussed the focus is on the role of the accountant in facilitating international environmental ‘solutions’ (see Burritt, 1995; Dunk, 1999) or the complexities of transnational corporate environmental accountability (Lehman, 1999). Either way it is vital that the issues are explored further. As Burritt noted

(t)here has been considerable, and inconclusive, philosophical debate about the serviceability of accountability mechanisms for solving social and environmental problems (1995, p.227).

There is little research into the ways that accountability is constructed at this level. Instead accountants are generally seen to play a role in conducting performance audits, developing compliance incentives, and monitoring and measuring the achievement of the stated goals as suggested by Burritt (1995; this was discussed in previous chapters, particularly chapter six). Such an approach assumes an uncritical link between definitions of accounting and its links to accountability.

4. CONTEXTUALISING GLOBAL ENVIRONMENTAL DISCOURSE.

Despite the transnational aspect of ecological citizenship, the state remains an exceptionally important focus of concern for ecological citizens and their organisations seeking to refashion its activities...(this) emphasise(s) the growing disjuncture or dislocation between moral citizens (as practised in individual and ‘community’ action and moral responsibility) and legal citizenship as defined by the nation-state (Christoff, 1996, p.161).

Climate change is an international environmental issue that has garnered much mainstream political, scientific and public attention. The tension articulated by Christoff (1996) between the ‘global’
dimension of ecological issues and the autonomy of the 'nation-state' is increasingly evident in international environmental negotiations that encompass issues of accountability and responsibility for global environmental decline (Werner, 1995). Climate change is an issue that is being negotiated within the context of this tension. These discussions have risen in importance over the last twenty years, culminating in a number of international scientific investigations (Intergovernmental Panel on Climate Change First and Second Assessment Reports, 1990; 1995) and political negotiations (Framework Convention on Climate Change, Conference of the Parties 1, COP2, COP3, COP4, see Appendix 2 for a chronology of events). Although the importance of these is rarely contested, there is some debate over the success of the implementation, compliance and effectiveness of these debates because of the pronounced tension between traditional nation-state boundaries and the boundary-less effects of global environmental crises such as climate change (Werner, 1995; Frank, 1997). The emphasis placed on procedural responsibility oftentimes denies the visibility of the moral and ethical dimensions of such agreements. It has been suggested that because of the importance placed on implementation, compliance and effectiveness may cause the 'spirit' of the agreement is lost. In this sense accountability may be facilitated whilst losing sight of the reason for such accountability (Werner, 1995). In this regard, Weiss & Jacobson argued that even if the formal obligations are complied with, there may be a question of compliance with the spirit of the convention (1999, p.16).

These ongoing negotiations raise important issues associated with international and national environmental accountability, such as how do we, or should we, or could we create and facilitate the exchange of accounts about respective international, national and regional attempts to address climate change? What has been the impact of different
nations on the manifestation of climate change (who has contributed more or less to the problem)? Is the traditional category of nation-state enough to determine contribution to, and accountability for climate change, or are these categories too homogeneous? Does gender, class, geography, culture also effect contribution to and accountability for climate change? Are regions/nations now diverse sites of difference such that geo-political boundaries are irrelevant as categories for debate? And even more importantly, in the face of global environmental decline are these categories even relevant? (these issues are discussed extensively within green political theory, including Press, 1994; Doherty & de Guess, 1996; Christoff, 1996). In connection to these complexities, Christoff has argued that

(b)y virtue of their regional and global impacts, environmental issues have expanded both temporally and spatially beyond the conventional borders of political decision making (1996, p. 151).

The effect of such expansion is not self-evident and will undoubtedly continue to reveal itself well into the future. Such uncertainty renders these questions unanswerable, because they will ultimately be the product of changing experimentation with policy, measurement and information systems, however questions such as these do draw into focus the importance of accountability in the construction of responses to such issues. Accountability performed through the giving and receiving of accounts of policies, agreements and measures, has enabling potential, but these processes also guide and encase discourses of nature and the possibilities of accountability towards already established ‘meanings’ and terms, reproducing the dominant discourse in the process.

At the heart of these discussions are assumptions about ‘nature’, and Frank (1997) has argued that the rise in an environmental global polity
has been made possible because discourses of nature have shifted from
the older placement of nature within the context of myths, and the
modernist interpretation of nature as a resource, to a late modern
discourse of nature that sees it as a life-sustaining system of inter-
connectedness. He argued that the mobilisation of scientific discourses
of nature and the rise of ecological sciences has offered a solid language
on which debate can be grounded. In the previous chapter I have
argued against the benefits of such totalising discourses, however the
prevalence of them is undeniable. He argued that

the consolidation of a permanent and centralized intergovernmental
environment domain established a set of fundamental world-level
understandings about nature (Frank, 1997, p. 415).

It is thus the ‘science of climate change’ that has facilitated discussions
about national and international environmental accountability,
responsibility and the implementation of policy and processes to
support a global reduction in greenhouse gases. I will now explore the
influence of this on the development of climate change negotiations,
pointing out how it facilitates ways of viewing accountability that are
limited and procedural, perpetuating a disembodied and ‘rational’
approach to this kind of environmental crisis and furthering the belief
that ‘nature’ can be managed.

5. ‘NATURE’ IN THE SCIENCE OF CLIMATE CHANGE AND THE
DIRECTION OF ACCOUNTABILITY

Climate change science is essentially the product of an amazing period
of interdisciplinary networking and modelling by international groups of
scientists working imaginatively and creatively over a period of
approximately 20 years (Jager & O’Riordan, 1996, p. 2).
As this quote by Jager & O'Riordan (1996) suggests, narratives of 'climate change' have existed for around twenty years in the current incarnation, and although they argue that this has emerged in an interdisciplinary environment, the 'interdisciplinarity' that they refer to is grounded in scientific methodological approaches. Although different branches of science and expertise have come together to discuss, model and measure climate change, they have been bound together by a 'sameness' in their ontological and epistemological assumptions. In this sense it does not meet the interpretation of interdisciplinary research developed in chapter two.

The emerging literature on climate change does include some economic, political and social theory (O'Riordan & Jager, 1996), but the included theories have relied heavily on the same core assumptions that locate them within discourses of modernity (Jasanoff, 1990) and the prevailing reasons cited for negotiating environmental accountability in regard to issues of global warming rely heavily on scientific evidence (Jager & O'Riordan, 1996; Frank, 1997; Blackwell, 1998; Bolin, 1998). This perpetuates the idea that there is a 'truth' about global warming that can be 'observed', 'identified' and then acted upon in a 'reasoned' manner (Jagtenberg & McKie, 1997). Such an approach focuses on a singular dimension of the 'reality of nature' and relies heavily on the assumption that a 'real nature' exists outside the language we employ to describe it. For this reason, the history of climate change is almost always related to scientific developments, whereby science becomes the critical 'grounding' on which historical narratives of climate change rest. Ponting (1991) uses such grounding to explain climate change.

In the last two hundred years human activities have added extra quantities of existing greenhouse gases - carbon dioxide, methane and nitrous oxide - and introduced new ones in the form of CFC's. The effect of these additions has turned the greenhouse effect from a vital life-
sustaining mechanism into what is probably the world's most threatening environmental problem - global warming (Ponting, 1991, p. 387).

Climate is an important part of our construction of the history of the planet. We denote certain periods of history particularly by the weather, like the 'ice-age' for instance and up to the industrial revolution these narratives of weather have been attributed to 'natural' variability (Ponting, 1991). After the industrial revolution the impact on weather variability is generally considered to be much more pronounced as the process of industrialisation was propelled to a large extent by widespread burning of fossil fuels (Gelbspan, 1997). As such, from this period on, there has been a notable rise in the accumulation of carbon dioxide and other greenhouse gases in the atmosphere. In conjunction with the rapidly increasing reliance on fossil fuels to enable the industrial revolution, there were also changes in patterns of production and consumption, the cultural importance of 'materialism', the impact of modern medicine on infant mortality and life expectancy, population increases - all of which have had an impact on some parts of the 'greenhouse' cycle (O'Riordan & Jager, 1996; Jagtenberg & McKie, 1997; Luke, 1998). For example, Ponting claims that

annual consumption of coal is now over 100 times greater than it was in 1800 and annual oil consumption has increased over two-hundred fold in the twentieth century (1991, p. 387).

And further,

the amount of carbon dioxide in the atmosphere has risen by a third in the last two hundred years - from about 270 parts per million in 1750 to 350 parts per million in the late 1980's. About half of this increase has occurred since the 1950s - carbon dioxide emissions rose from 1.6 billion tones per year in 1950 to 5.4 billion tons in the mid-1980's (Ponting, 1991, p. 388).
Constructing ‘nature’ in terms of science has played an important part in raising the visibility of environmental issues and I do not wish to dismiss such achievements (Frank, 1997), however, I am concerned that these discourses should not colonise the debate entirely (Press, 1994; Christoff, 1996; Harvey, 1996; Jagtenberg & McKie, 1997). It is in this sense that scientific discourse must be destabilised as the only valid means through which we can build accountability relationships, in this sense it exists in relation to the notion of alterity (otherness), because it relies on the expulsion of difference in order to create the kind of cohesion on which it depends (Christoff, 1996; Kenny, 1996). Only when knowledge is considered in the context of its contestability, and its multiplicity can the debate be open and inclusive, rather than closed and exclusionary. I reiterate that all knowledge is both liberating and limiting, but we must be prepared to discuss its limitations and constantly challenge the boundaries that centralise and operationalise certain knowledge, whilst marginalising others.

The strategic postmodern perspective argued for in this work does not automatically ‘open’ debate, but it calls for greater sensitivity to other knowledges. For example, the perspective of the indigenous peoples in the island states (such as the Cook Islands, New Caledonia, Hawaii) who will be the first to feel the effects of rising sea levels and temperatures needs to be considered under a broader umbrella of ‘valid’ knowledge (Ponting, 1991). This knowledge could be contextualised to include such things as: the history of colonisation of island nations and the corresponding power inequities; a shift away from the assumption that significant ‘knowledge’ is related to population size (in that these places can be made irrelevant because the difference that denotes belief systems may not relate to the ‘greater’ global perspective); the relatively low level contribution of these states to ‘human induced’ climate change
and the unique relationships developed between people, history, and landscape that may be very different from a late-industrial approach. This requires our constructions of ‘knowledge’ to be flexible, to allow for multiple discourses of nature as ways of describing and knowing the environment, be these scientific formulas, ‘Mother Earth’, or bioregional narratives (Cheney, 1989).

The relationship between scientists and the recognition of climate change identified by Ponting (1991) is supported across the literature (see O’Riordan & Jager, 1996; Clark & Jager, 1997; Frank, 1997; Gelbspan, 1997; Tokar, 1997). The origins of such science have been traced back to 1896 when a Swedish scientist, Svante Arrhenius, forecast a rise in global temperatures from the burning of fossil fuels (Ponting, 1991). However, within the scientific literature it is more often Revelle & Suess (1957) who are cited as the first people to have considered climate change to be a significant ‘scientific phenomena’. They suggested that

humanity is performing a great geophysical experiment...that may yield a process of determining weather and climate (Revelle & Suess, 1957, as cited in Sagar & Kandlikar, 1997, p. 3139).

Following on from this, in the 1970’s a number of scientific studies were conducted into the relationship between human activity and climatic conditions or irregularities (SCEP, 1970; SMIC, 1971) and other studies considered the impact of such things as economic growth (Meadows et al, 1972) and population (Ehrlich, 1968) on the environment. This is often described as a process of ‘modelling nature’ (Jagtenberg & McKie, 1997) and it entered into an era of high public visibility, impacting multiple realms of contemporary life and required a wide variety of

5 In the following chapter I will discuss more extensively the problems with modelling nature, some of which also appeared in the discussion in chapter five.
assessments of physical danger and the socio-economic and political consequences of different policy initiatives (Read, 1994; Jager & O'Riordan, 1996; Frank, 1997).

5.1 Modelling Climate Change and Environmental Accountability

The notion of modelling nature has been problematised in previous chapters, as this kind of artificial (re)construction of nature is not independent of the language used to describe it, and the positionality of those empowered to conduct such modelling (Redclift & Benton, 1994; Wynne, 1994). Having said this, climate change modelling is becoming increasingly sophisticated with the development of high level computer technology and there have been attempts to encourage the physical and the social sciences to meet and inform each other in the newer attempts at modelling (Frank, 1997; Jagtenberg & McKie, 1997). As Jager and O'Riordan argued

(t)hese models by no means fully integrate all aspects of the natural and social sciences, they do not take into account the subtleties of how different groups in different societies generate demands for natural resources, including fossil fuels, cattle and rice production and timber products, nor do they yet appreciate the socially divisive aspects of brutal politics that worsen the plight of those already economically and/or environmentally vulnerable (1996, p. 3).

It has also been suggested that ‘true’ and ‘valid’ knowledge of climate change has not only been limited to the language of science within dominant discourse, but this science has been dominated by well established and well funded Western research institutes and scholars (Agarwal & Narain, 1991; Chatterjee & Finger, 1994; Jager & O'Riordan, 1996; Sagar & Kandlikar, 1997). As a result, it has been argued that the impact of poverty, gender, culture and class on climate change has not
been considered successfully, and the reasons why the 'developing' world is engaging in activities such as high levels of deforestation have not been clearly articulated by climate change models (Agarwal & Narain, 1991). In such a context, accountability based on these models would continue to perpetuate these distortions. O'Riordan & Jordan argued that the Western dominated science of climate change encouraged discussion towards a consideration of what was a tolerable degree of climate alteration, thereby avoiding the moral and political crises of north-south inequity, the debt trap and differential use of the earth's life support functions by rich and poor (1996, p. 66).

5.2 Climate Change Science and International Political Negotiation.

The 1980's saw an increase in climate change research and the issue began to garner international interest at a policy level, with many conferences and meetings being convened to debate the 'truth' or 'falsity' of the evidence being presented (these are explored more extensively in the following chapter). These concerns began to be communicated in language that was accessible to the public and, as such, climate change or the 'greenhouse effect' as it is more often described found its ways into debates within the mass media (Bodansky, 1993).

In 1988 the Intergovernmental Panel on Climate Change (IPCC) was established with the task of reviewing and reporting the latest science, impacts and responses to climate change. The release of their First

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6 This is a problematic categorisation, but I'm not sure how to avoid it. The terms 'emerging', 'Eastern', Third World' all have the same problems. It is an artificial division of the world and one that is inherently ideological, the analysis of which remains outside the bounds of this thesis, however, I want to acknowledge its importance.
Assessment Report in 1990 provided scientific evidence of the impact of greenhouse gas emissions on global climate. As the United Nations Environment Programme (UNEP) noted:

the Report confirmed the scientific evidence for climate change. It had a powerful effect on both policy-makers and the general public (UNEP, 20th April, 1999, www.unep.ch/iuc/submenu/infokit/fact17.htm).

This laid the foundations and provided enough evidence for the negotiation of a United Nations Framework Convention on Climate Change (UNFCCC) which was established in 1990 and negotiated in 1991, and opened for signature in 1992 at the Rio Earth Summit. This subsequently led to multiple Conferences of the Parties to the UNFCCC, through which legally binding targets continue to be debated.

In 1995, 2500 scientists contributed to the finding of the IPCC Second Assessment Report, wherein they stated that there was a need to curb human induced climate change. Although the report acknowledged that there were scientific uncertainties about the predictability of climatic instability, they believed there was enough evidence to suggest that climate change caused by human activity (mainly through the burning of fossil fuels) is likely to cause widespread economic, social and environmental dislocation and as a result they called for greenhouse gases to be curbed by up to 60% of 1990 levels of emissions (Gelbspan, 1997). This IPCC report estimated that average global temperature would rise by 1 to 3.5 degrees, and there will be a 15 to 95 centimetre rise in sea level by 2100 (Kates, 1997). This has led to ongoing international debates and conferences, the Conference of the Parties (these are still ongoing, with the COP5 set for 2000).
5.3 'Language', Climate Change and Environmental Accountability

The death of these paradigms may have come too late to save the biosphere as we know it, but a history of changing ideas of nature remains critical... (Jagtenberg & McKie, 1997, p.5).

As has been outlined in the previous section, the language used to describe the impact of climate change has relied substantially on the presuppositions of modernity, including truth, fact and reason. This perpetuates the assumptions that there are rational interpretations of 'natural' and 'unnatural' events and that these are somehow devoid of the cultural artefacts that describe them, or the specificities of race, gender, class and species that experience them (Shiva, 1989; Barrett & Phillips, 1992; Gare, 1995). It has been noted that both the philosophies of science and neo-classical economics, as instruments of modernity and the Enlightenment are implicated in the construction of the current environmental crises that face our communities (Gare, 1995). Yet it is precisely these tools that have been invoked to solve many of the problems (Zimmerman, 1994; Gare, 1995; Jagtenberg & McKie, 1997). Such an approach delimits and organises our experiences of nature within an established framework, and one that has not been equipped with the tools and may not be a desirable response to complex environmental issues that may be global (and abstract) in scale, but experienced within the locality of a bio-region (Cheney, 1989), and interpreted through complex specificities (such as race, class, gender, experience, see Salleh, 1995; Kenny, 1996).

Williams (1980) argued that 'modelling' nature creates an artificial representation, that displaces nature from 'life' processes and from its position within competing discursive terrain. In this sense it sanitises nature, making it fit the mathematically abstracted universe that is a consequence of dominant discursive constructions. He argued that by
alienating the ‘living’ process, we alienate ourselves and to avoid this we need “different ideas, different feelings, if we are to know nature as varied and variable” (Williams, 1980, p. 85). Mainstream environmental thought, like that operational in climate change debates, silences nature, constraining it to that which can be homogenised, abstracted, measured and named. O’Riordan & Jordan argued that

> clearly, it is easier for organisations to fit problems to an existing template to an existing template of ‘solutions’ than to work out new solutions to each new problem (1996, p. 81).

In this sense, human activity is dominated by the identity of the Western industrialised nations, these being the nations most responsible for climate change But the category is used as broadly as possible in order to universalise responsibility, to make ‘general’ the activity of a few, and to largely disassociate any specific responsibility for environmental destruction from the hands of the most destructive (Ponting, 1991; Said, 1994; Everett & Neu, 1999). Even if global environmental issues are universal in effect, and thus invoke global desires for some sort of environmental strategy and accountability, Everett and Neu (1999) have argued that the way we come to perceive these is not universal, nor is our responsibility for them. They argued that

> the point is that there are both temporal and distributional issues involved...the discourse of global warming and potential solutions are framed within a pareto-optimal viewpoint, where the current unequal utilisation of resources is presumed to be the starting point for future action (1999, p. 17).

The scientific investigations into climate change have provided the grounds on which policy initiatives have been legitimated at both a national and international level and these policies play a role in the
construction of processes of accountability between nations, between industries and between humans and nature. Harvey described these as "scientific-technical rationality" (1996, p. 177) in which

our definition of many ecological problems (e.g., acid rain, the ozone hole, global warming, pesticides in the food chain, etc.) is necessarily science led and that solutions equally depend upon the mobilization of scientific expertise and corporate technological skills embedded within a rational (state-led) process of political-economic decision making (1996, p.177-178).

6. FRAMING MEANING AND ORGANISING KNOWLEDGE

The critique of scientific methodology and the dominance of scientific evidence as a means of instigating action and constructing belief systems about nature have been discussed extensively in chapter two and chapter five of this thesis. The underlying assumptions that inform scientific methodologies have been shown to highlight and obscure knowledge according to patterns of dominance and power rather than 'truth' and 'reality' (McHoul & Grace, 1993). The influence of such assumptions on the construction of 'nature' cannot be ignored in light of the fact that the new 'inter-disciplinary' terrain of nature is increasingly being colonised (Soule & Lease, 1995; Jagtenberg & McKie, 1997) and bound to established patterns of thinking and established processes of problem solving (Robertson et al, 1996).

Disciplines are by their nature exclusionary. They are part of a division of nature and the universe into different domains and activities, and they create their own discursive spaces. There is considerable tension involved in this institutionalized partitioning of analytical space and in the negotiation of which constituency can speak for social groups, animal species, or ecologies (Jagtenberg & McKie, 1997, p. 32).
As science has played a central role in naming and understanding the impact of human activity on climate, and the possible effects this may have on social, economic and political organisation of human activity in the future this has enabled a way of viewing the issues whilst silencing others. As such, it is important to outline some of the key aspects of this science and the effect that it has on the organising of "analytical space" (Jagtenberg & McKie, 1997, p.32), including the construction of 'nature' itself and the construction of 'accountability and nature'. Harvey argued that discourses of nature should be seen

as moments in a social process in which conflicting forms of social power struggle to gain command of institutions, social relations and material practices for political purposes (1996, p. 174).

The concept of 'climate change' is relatively simple, yet, the science and politics are incredibly complex, which is not surprising as it is a manifestation of complex social struggles (Harvey, 1996).

6.1 The Construction of Anthropogenic/Non-Anthropogenic Climate Change.

The scientific problem lies in identifying to what extent climatic changes may be attributed to artificially induced global warming and in forecasting its consequences (Ponting, 19991, p. 389).

In chapter five I discussed the construction of the dichotomised structure of post-Enlightenment thought and in doing so paid particular attention to the construction of nature in opposition to culture. I discussed this from the point of view of discourse, exposing the limited ways in which we have come to signify ‘nature’ and the possible

7 Artificial in this sense assumes something can be ‘outside nature’ and ‘unnatural’ (Harvey, 1996).
influence this has had on the development of an environment in crisis. Climate change discussions have also juxtaposed nature and culture, whereby it is acknowledged that 'culture' is doing damage to 'nature'; 'culture' needs to change to facilitate a more healthy 'nature'; and that 'culture' will determine the means through which this will be done. The notion of anthropogenic climate change (that which is the result of human activity) is central to the scientific explorations into global warming. At the heart of such science is a question: are 'we' doing it or are 'they' doing it? A question that is submersed in layers of language and history in which the either/or ideological bias of modernist discourse is illustrated. Such polarisation of nature/culture has been identified in previous chapters as a key factor in the advance of culture at the expense of 'nature' (Merchant, 1980). Jagtenberg & McKie (1997) support such a view arguing that humanity's ecological place can only be relativised by the blurring of oppositional poles, such as nature-culture, mind-matter, male-female.

It is the anthropogenic aspects of climate change that are at the heart of climate change science. Separating what are seen to be 'natural' fluctuations in climate, from those that are 'unnatural' is vital to the advancement of climate change science and solutions (Clark & Jager, 1997). This has proved difficult because of the 'natural' variability of climate as has been suggested by leading scientists such as Bob Watson, Chair of the UN's Intergovernmental Panel on Climate Change and Geoff Jenkins of the Hadley Centre (where the most extensive computer modelling of climate change in the world is undertaken) in the United Kingdom (www.abc.net.au/lateline/stories/s25220). Although in cases such as this one, time is spent on categorising change along abstract lines, attributing it to either naturally occurring or culturally induced activities.
The ‘anthropogenic’ aspects of climate change are made up of carbon dioxide, made up of the burning of fossil fuels, deforestation, desertification and agriculture), water vapour, nitrous oxide (found in agriculture, fossil fuel combustion, use of catalytic converters in cars), methane (rice paddies, cattle rearing, biomass burning, coal mining, ventilation of natural gas, landfill, deforestation and wood fuel use) and chlorofluorocarbons (CFC’s, from insulation, air conditioners, solvents). Carbon dioxide is the largest single contributor to greenhouse gases and is the major target of much of the climate change debate (Environment Australia, 1998, www.environment.gov.au/portfolio/climate/factsheet). Ironically, these gases also occur ‘naturally’ in the environment, but it is the ‘unnatural’ element or the human element that is of concern to climate scientists and policy makers.

As such, the purpose of scientific investigations into climate change has been to encourage the world’s governments to

foresee and prevent potential man-made changes in climate that might be adverse to the well-being of humanity (UNEP, 1999, www.unep.ch/iuc/submenu/infokit/fact17.htm).

The significance of the anthropocentric bias illustrated in this comment should not go unnoticed. Even at this level, accountability is interpreted to mean human-human accountability, rather than a broader responsibility for the effects human lives have on the non-human, effacing the legitimacy of the ‘non-human’ world in these discussions (Everett & Neu, 1999).

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8 I would write (sic) except for the accuracy of this kind of engendered statement (for example, Salleh, 1995)
6.2 The Strategic Importance of Science and Counter-Science.

The importance of science and scientific methodology as a means of validating environmental issues and guiding policy initiatives has been well documented (Mies, 1989; Seidman, 1994; Robertson et al, 1996; Harding, 1998). Seidman pointed this out when he suggested that

(i) if the scientist could be transfigured into a universal mind aspiring to truth, scientific knowledge could be free of particular social prejudices and interests. Moreover, if only science yields objective truths, then only scientists could be trusted to guide social policy (Seidman, 1994, p.274).

Given this framework and the other issues surrounding the assumptions that have come to dominate discursive frameworks, it is not surprising that scientific evidence has also played a ‘counter’ role in climate change discussions. Many contemporary theorists have commented on the relationship between science, research and funding and the associated issues of representation, access, wealth and power (Gare, 1995; Jagtenberg & McKie, 1997). And as scientific evidence has been required to give credence to political decisions, ‘scientific experts’ have taken on this role. Gare noted that

on any technological matter which becomes a political issue there will almost always be found scientific experts on both sides of the debate (1995, p. 25).

And further,

scientific experts and the knowledge required to justify the views they are supporting are available to anyone with money (Gare, 1995, p. 25).
This point is reiterated in Gelbspan's (1995) work into climate change funding and policy directions in the United States of America. He wrote that

(0)ver the last six years the oil and coal industries have spent millions of dollars to wage a propaganda campaign to downplay the threat of climate change. Much of that money has gone on amplifying the views of about a half-dozen dissenting researchers, giving them a platform and a level of credibility in the public arena that is grossly out of proportion to their influence in the scientific community (Gelbspan, 1995, p. 33).

In concluding this section it is important to acknowledge that it was through 'scientific' evidence that climate change has become a valid issue for both national and international debate. It is thus the 'science of climate change' that has facilitated discussions about national and international environmental accountability, responsibility and the implementation of policy and processes to support a global reduction in greenhouse gases. However, the politicisation of science as a valid discourse through which these debates can take place calls into question the 'objective' role it is supposed to play in the construction of climate change discourse. This leads to a consideration of some of the complex political issues that have surrounded climate change issues, and issues of national accountability (these will be discussed in light of specific textual samples in the following chapters).

7. POLITICAL ENVIRONMENTAL DISCOURSE: ENVIRONMENTAL AND ECONOMIC HARMONY?

(To)he perceived seriousness of a threat is largely determined by the extent to which it is a help or a hindrance to goals set by centers of political and economic power (Edwards, 1997, p.2).
The idea that environmental concerns and economic interests can be in harmony have been around for at least ten years (some high profile discussions include those by Brundtland, 1987 and Pearce et al, 1989), taking the form of ‘sustainability’, ‘sustainable development’ or ‘ecological modernization’ (Everett & Neu, 1999). Studies into the possibilities of environmental accounting and accountability have not been immune to this process (Batley & Tozer, 1993; Gray, 1994; Rubenstein, 1994; Stone, 1995; Lamberton, 1998), such that diverse and often competing interests have adopted these ideas in order to argue, rationalise and defend the maintenance of the current system (Kahane, 1992), with minor adjustments in order to develop ‘solutions’ to environmental problems (Zimmerman, 1994). This is a particularly appealing political position, as it has the potential to integrate the new ‘environmental concerns’ with the status quo. This also limits the possibility of a global environmental crisis destabilising current political discourse, in which the economy has become central to broader socio-political negotiations (Nelson, 1993; Press, 1994; Doherty & de Gues, 1996; Peterson & Peterson, 1996). Gibson clearly articulated the problems of integrating the environment into already existing models, particularly in light of the dominance of neo-classical economics and its emphasis on economic growth, in regard to which she wrote that the major concern is

underlying philosophy which believes that the environment in which we live can be constrained within the artificial constructs of “the market” (1996, p. 665).

This, she argued, reflects

the false paradigm that the environment is part of the economy, when in fact the reverse is true (Gibson, 1996, p. 656).
Peterson and Peterson (1996) pointed to this problem when they explored the economic dimensions of the *Exxon Valdez* oil spill. They argued that economically determined valuation models distort analysis of ecological problems by trivializing other social functions such as education, politics or law. For example, despite the accuracy of various economic valuation models in estimating the money lost by the Alaskan fishing industry because of the *Exxon Valdez* oil spill, the cultural damage to area residents cannot be appropriately measured (Robertson & Robertson, 1996, p. 211).

As has been suggested in chapter five, much environmental accounting literature has adopted this position, arguing that discourses of environmentalism need to be given “visibility and legitimacy within the academic community” (Everett & Neu, 1999, p. 3). A perspective that has generally resulted in choices that stretch the conventional accounting framework in order to accommodate environmental issues. This need for visibility and legitimacy is not denied in this research and the contribution of such authors is significant, however the broader objective of environmental accountability has remained relatively limited to what ‘accounting’ can do to give visibility to environmental information and enhance the accountability function (discussed earlier in this chapter).

Although accounting for sustainable development, corporate environmental disclosures and the development of environmental accounting standards provides a significant contribution to the development of an environmentally literate and conscious society, this comes at some cost (Lehman, 1999; Everett & Neu, 1999). Suggesting, analysing and discussing how such processes of accountability can aid in the development of a more environmentally conscious society, and one that does not continue to flourish on the basis of large scale
environmental destruction has been left marginal to the more hopeful technical offerings of many scholars and practitioners (Gibson, 1996; Lehman, 1999). It has been suggested that limited analysis of environmental accountability in all its possibilities only serves to perpetuate the cycle of environmental abuse (Hines, 1991; Lehman, 1999), but the abuse takes on a superficially green face, a process often described as greenwashing (Helvarg, 1996; Beder, 1998; supported by studies like that of Harte & Owen, 1991; Patten, 1992; Deegan & Rankin, 1996; 1996a; Neu et al, 1998). Lehman argued that

(a)n environmental ethic that relies on a procedural economic discourse submerges the fact that humanity is a part of a vast physical order which involves a process quite unique from the naive instrumental explanation offered by the current dominant discourse (1996, p. 668).

7.1 Political Complexities: Competing Interests

Climate change, as it is discussed at international levels, is complex, contradictory and often inaccessible because of the dependence placed on discourses of science, international law, and the complex political and economic pressures that influence the debate. These issues have been discussed by a number of authors including Victor and Salt (1994), Read (1994) and Jager and O'Riordan (1996). At a general level these works explore multidirectional and competing interest groups illustrating a struggle to colonise the meaning of climate change within a particular discourse, ridiculing or marginalising alternative ways of coming to knowledge of climate change and viewing the options which are available to address the impact of climate change.

The negotiating of such issues at an inter-governmental level is a relatively new and challenging process. Environmental political theorists
suggest that it presents important questions about the nature of democracy within the context of widespread environmental decline (Doherty & de Gues, 1996; Held, 1996). As Press (1994) argued there is a tension between wanting to see the operations of international participatory democracy in solving global environmental decline, whilst acknowledging that such processes are not renowned for their speed or responsiveness to emerging issues. He wrote that

(t)he implication was that no mode of democratic politics currently practiced could possibly handle problems of the scope and complexity of global environmental degradation. Democratic politics would be too slow to respond, relying as it did on incrementalism and drawn-out public policy making (Press, 1994, p.12).

At the same time, it was generally accepted that centralized power would not be the answer either, apart from the impracticability of it being able to be developed and given the authority to act in the current climate of economic and political liberalisation, centralized approaches were also not renowned for their speed, efficiency or responsiveness (Eckersley, 1996). According to Doherty & de Gues (1996), it is now all but assumed that eco-politics needs to organise around the principles of democracy, wherein much debate has occurred over what 'kind of democracy' (Press, 1994). However, the meeting of liberal democratic values and market economics has also emerged within this literature, re-inscribing both as the organising principles through which international environmental issues should be negotiated (Jagtenberg & McKie, 1997, this explored more fully in the following chapter).

This supports O'Riordan's position when he wrote that there are a "host of political interests" who "try to manipulate the evidence to suit their needs and clients" (1997, p. 34) and it has also been suggested that

the real battles over climate change are being fought over issues of
trade and national competitiveness in the context of greenhouse gas policies (Sagar & Kandlikar, 1997, p. 3139).

The international climate change project superficially recognises difference, predominately in the structure of national economies described as having “common but differentiated responsibilities” (Kyoto Protocol, Article 10) whilst attempting to homogenise the ways that are considered acceptable to deal with environmental issues of this magnitude. The ‘environmental problem’ is thus named by science and solved by political negotiation (through liberal economic democratic processes, such as government environment ministers, corporate lobbyists and scientists and environmental non-government organisations) and operationalised via economic means (such as cost-benefit analysis and emissions trading mechanisms) (Pickering & Owen, 1994; Tokar, 1997).

There are many complexities, and not all can be described or analysed here, however, the following list identifies some the competing interests within the debate on climate change. These include:

- the small island nations, potentially the most severely affected areas of global warming and its consequence of rising sea levels and climatic instability. These islands represent the most vulnerable and least ‘powerful’ positions within the debate and have argued for tough emissions targets.
- oil producing countries who seek to delay action in the foreseeable future.
- big emitters who are resistant to change and any possible effect this may have on 'economic health' and 'standards of living'.
- would-be emitters (generally countries in the developing or industrialising world) who are not prepared to be bound by the debate until current emitters who have benefited from uncontrolled greenhouse gas emissions show significant changes in their greenhouse gas record.
• other non-governmental lobby groups that have their own demands, be these lobbyists for industry or environmentalists (see, Jager & O'Riordan, 1996)

As such, these groups have interacted and continue to interact in climate change debates with differing objectives, pressures, aspirations and aims, and with a different capacity to influence the outcomes of the debates (Chatterjee & Finger, 1994; O'Riordan & Jager, 1996; Edwards, 1997; Gelbspan, 1997). The dominance of ‘developed’ nations and the economic and scientific assumptions that are brought with them, have played the most influential role on the setting of greenhouse gas targets. Yet these countries are not likely to be effected as significantly as ‘developing’ nations and small island nations who have played a less ‘central’ role in the negotiations (I will develop this further in the following chapter).

8. CONCLUSION(S)

Reform of environmental accountability policy needs to be re-examined untainted by a dominant, neo-classical, financial accountability perspective (Burritt & Welch, 1997, p. 545).

As suggested by Burritt & Welch (1997), this chapter has explored the way that discourses can function to frame meaning, and how the discourses of nature have been organised around ‘science’ which has arisen as the means through which international debate over climate change has occurred (Frank, 1996). Although such totalising discourse effaces many of the alternative ways of coming to knowledge about nature, it has provided the critical grounding through which international environmental accountability can be negotiated.

In doing this, I have contextualised discourses of environmental
accountability within the historical, scientific and political discursive practices of the climate change debate. These will be explored in relation to the Kyoto Protocol in the following chapter.