



## **The Social Construction of Climate Change: Deconstructing the Climate Change Debate in Australia**

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# The Social Construction of Climate Change

## Deconstructing the Climate Change Debate in Australia

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31 May 2013

Submitted in fulfilment of the requirements of the degree of Doctor of Philosophy.

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## Abstract

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Since the 1980s there has been a growing recognition of the significant risks associated with climate change. By 2007, the scientific evidence that anthropogenic greenhouse gas emissions were causing global warming was irrefutable. The Intergovernmental Panel on Climate Change released its Fourth Assessment Report which describes in great detail the biophysical and social impacts of climate change, some of which are already being experienced. Many argue that Australia is particularly vulnerable to the impacts of climate change. It is also widely acknowledged that as one of the highest per-capita emitters in the world, Australia has a particular responsibility to reduce its greenhouse gas emissions. However, despite this, Australia's response to climate change has been largely inadequate, giving rise to a need for research into factors shaping this response.

Research has identified the important role that discourses play in shaping perceptions of climate change and responses to the issue. As a complex and intangible issue, climate change needs to be represented through concepts, terms and the communication of scientific knowledge. Thus people's understanding of climate change is mediated by the information available to them, the discourses within which it is embedded, and the ways that these discourses construct the issue. The climate change debate is characterised by a wide variety of alternative perspectives with different actors perceiving and portraying the issue and options for addressing it in contrasting often contradictory ways. In this context, it is argued that discursive approaches can provide valuable insight into responses to climate change. These approaches have been used to great effect by scholars exploring climate change discourses in many other countries. However, very few studies have investigated climate change discourses within the Australian context, a gap in the literature that this thesis seeks to address.

The aim of this thesis is to investigate the social construction of climate change in Australia between 1987 and 2007, with a particular focus on 2007, which represented a major turning point in the climate change debate in Australia. It investigates two discourses informing and emanating from the climate change debate and considers how these discourses construct the issue of climate change and options for addressing it. This study was based on the collection of a wide range of media, government, and non-government texts. Drawing on the work of Carvalho (2005; 2008), Dryzek (2005) and Lindseth (2004;

2006) among others, I developed a unique framework for conducting discourse analysis. It comprises four interconnected stages: examining texts, identifying and characterising discourses, assessing their influence, and considering the options and outcomes they give rise to.

This framework is used to analyse two key discourses shaping the climate change debate in Australia during 2007: climate change activism and climate change scepticism. For each discourse the main arguments and messages, actors and their motives, key linguistic and rhetorical characteristics, discursive strategies, and key constructions are identified and discussed. The discourse of climate change activism with its emphasis on the seriousness of climate change and the need for action, was found to be particularly widely supported and reported by the media, achieving prominence through many front page stories, feature articles and editorials. The influence of this discourse can be traced in growing public concern, shifting political rhetoric and a wide range of business initiatives. While there were significantly fewer texts supporting and reporting climate change scepticism, it remained a powerful discourse, providing an alternative narrative and undermining calls for action. The debate about what should be done to address climate change was extremely contentious during 2007, and alternative constructions of international agreements, domestic frameworks, and calls to improve efficiency and reduce consumption are examined.

It is argued that the way in which climate change is constructed has significant implications for responses to the issue. It was found that while the proponents of the discourse of climate change activism were successful in communicating its arguments and messages they were less successful in translating concern about climate change into substantive action to address the issue. It is clear that simply communicating the dire consequences of climate change is not enough. Climate change, and options for addressing climate change, need to be constructed in new and different ways, that resonate with people's lives and values, to stimulate and sustain meaningful action. This thesis contributes to the scholarship around social responses to climate change in three ways. Firstly, it illuminates the social construction of climate change in Australia. Secondly, it provides a detailed analysis of the discourses of climate change activism and climate change scepticism in Australia. Finally, it proposes a practical model for undertaking the analysis of climate change discourses.

## Statement of Originality

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This work has not previously been submitted for a degree or diploma at any university. To the best of my knowledge and belief, the thesis contains no material previously published or written by another person except where due reference is made in the thesis itself.

Karen F. Hytten.

31 May 2013



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## List of Abbreviations

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ABARE	Australian Bureau of Agriculture and Resource Economics
ABC	Australian Broadcasting Corporation
ACF	Australian Conservation Foundation
AIGN	Australian Industry Greenhouse Network
APEC	Asia Pacific Economic Cooperation
APP	Asia Pacific Partnership on Clean Development and Climate
BCA	Business Council of Australia
BOM	Bureau of Meteorology
CANA	Climate Action Network Australia
CCPP	Cities for Climate Protection Program
CDA	Critical discourse analysis
CH <sub>4</sub>	Methane
CO <sub>2</sub>	Carbon dioxide
CO <sub>2</sub> -e	Carbon dioxide equivalent
COAG	Council of Australian Governments
COP	Conference of the Parties to the UNFCCC
CSIRO	Commonwealth Scientific and Industry Research Organisation
EIT	Economy in Transition
ENSO	El Niño-Southern Oscillation
ESD	Ecologically sustainable development
EU	European Union
FOE	Friends of the Earth
G77	Group of 77
G8	Group of 8
GCP	Greenhouse Challenge Program
GDP	Gross domestic product
GHG	Greenhouse gas
H <sub>2</sub> O	Water
HFC	Hydrofluorocarbon
ICSU	International Council of Scientific Unions
IPA	Institute of Public Affairs

IPCC	Intergovernmental Panel on Climate Change
IPT	Interim Planning Target
LULUCF	Land use, land use change and forestry
MRET	Mandatory Renewable Energy Target
N <sub>2</sub> O	Nitrous oxide
NGO	Non-government organisation
NGRS	National Greenhouse Response Strategy
NGS	National Greenhouse Strategy
O <sub>3</sub>	Ozone
OECD	Organisation for Economic Co-operation and Development
PFC	Perfluorocarbon
ppb	Parts per billion
ppm	Parts per million
SF <sub>6</sub>	Sulphur hexafluoride
SRES	The IPCC's Special Report on Emissions Scenarios
TAR	The IPCC's Third Assessment Report
UN	United Nations
UNEP	United Nations Environment Program
UNFCCC	United Nations Framework Convention on Climate Change
USCAP	US Climate Action Partnership
WMO	World Meteorological Organisation
WWF	World Wide Fund for Nature

# Chapter 1: Introduction

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## 1.1 THE NEED FOR RESEARCH

Climate change is arguably the most complex and urgent challenge facing contemporary society (UNEP 2009:2; UN 2012:6). Anthropogenic greenhouse gas emissions have already contributed to an increase in average global temperatures of approximately 0.76°C since the Industrial Revolution. Current projections estimate further increases of between 1.1 and 6.4°C this century, with significant implications for other climatic variables including precipitation, climatic variability and extreme weather events (IPCC 2007a:5-16). The impacts of such rapid climate change will be widespread. Rises in sea levels will result in the inundation of low lying islands and coastal areas, displacing millions of people (Nicholls *et al.* 2011; Wetzel *et al.* 2012). In conjunction with changes in climate zones, coastal erosion and salt water intrusion of inland waterways could affect up to one third of the world's croplands, with serious implications for world food supplies. Climate change will exacerbate water shortages and increase threats to human health. It is also projected that changes in climate zones will occur more rapidly than the adaptive capacity of many plants and animals, resulting in a serious loss of biodiversity (IPCC 2007b:11-8; UNEP 2009:34-41; Australian Academy of Science 2010:14-5).

Climate change is a global problem, and as such requires a global response. No one nation can address climate change in isolation. Growing recognition of the issue in the 1980s saw the emergence of an international climate change regime, culminating in 1992 with the United Nations Framework Convention on Climate Change (UNFCCC), and in 2005 with the Kyoto Protocol coming into force. However, these agreements can only be effective if signatory nations commit to achieving the goals they enshrine. Given the sovereignty of the nation state, it is at this level that responsibility lies for developing and implementing effective policies and programs to address climate change. Thus, while international agreements are vital, so too are the political and sub-political processes occurring within nation states which enable and constrain the formation and implementation of both international agreements and domestic policies (Bulkeley 2000a:727). As such, there is a recognised need for research into the social issues related to regionally specific mitigation

options and barriers to their successful implementation (Parry 2001:259; Härtel and Pearman 2010:16).

The potential implications of climate change for Australia are of significant concern (Lowe 2005:68-108; IPCC 2007b:516-24; Garnaut 2008:121-50; CSIRO 2011:45-57; Climate Commission 2011:23-51). However, despite scientific consensus about the seriousness of climate change, Australia's policy response to the issue has been completely inadequate (Lowe 2005:185-91; Hamilton 2007:36-43; Pearse 2007:97-122; Diesendorf 2009:24-8). This is clearly evident in the considerable discrepancy between the scientific consensus about what is necessary to prevent dangerous climate change, and what the Australian Government has committed to achieving. Successive reports compiled by the Intergovernmental Panel on Climate Change (IPCC) have highlighted that significant cuts in greenhouse gas emissions are required to stabilise climate change. Its most recent assessment suggests that emissions need to decline to 50 - 85% below 2000 levels by 2050 (IPCC 2007d:67). The UNFCCC, which Australia signed in 1992, recognises that developed countries need to take the lead in reducing emissions (UN 1992:11-5). To fulfil this clause of the Convention, developed countries such as Australia need to commit to individual targets greater than the total reduction required. In this context, scientists argue that developed countries need achieve emissions reductions of at least 25% below 1990 levels by 2020, and between 80 - 100% by 2050 (Weaver *et al.* 2007; Matthews and Caldeira 2008; Diesendorf 2009:93).

In contrast, the only target set by the Howard Coalition Government, which held power from 1996 - 2007, was an 8% increase in emissions from 1990 levels by 2008 - 2012, under the Kyoto Protocol (although the government did not even commit to this target by ratifying the Protocol). In November 2007, the newly elected Rudd Labor Government ratified the Kyoto Protocol, formalising this commitment. The new government also announced the long-term goal of reducing Australia's emissions to 60% below 2000 levels by 2050. However, it refused to commit to a short-term emissions reduction target and actively obstructed international efforts to set a voluntary non-binding target for developed countries at the United Nations climate change conference in Bali in December 2007. More recently, the long awaited Carbon Pollution Reduction Scheme only committed to reducing Australia's emissions to 5% below 2000 levels by 2020 (Commonwealth of Australia 2008:iv). These targets fall well short of not only scientific assessments of what is required

to address climate change but also the recommendations of key economists, including Stern (2006:218) and Garnaut (2008:xxx), who recommends that Australia should express its willingness to reduce its emissions by 25% by 2020, and 90% by 2050.

Extensive research has been conducted into various aspects of Australia's response to climate change, and why it has been so ineffective (e.g. Bulkeley 2001b; Christoff 2005; MacDonald 2005; Hamilton 2007; Pearse 2007; Hall and Taplin 2008; Schlapfer 2009; Stevenson 2009; Carson *et al.* 2010; Pietsch and McAllister 2010). There are, however, very few studies that utilise discursive approaches to explore the discourses surrounding Australia's response to climate change. These approaches have been used to great effect by scholars exploring climate change discourses in many other countries including Canada (Babe 2005), Finland (Dispensa and Brundle 2003), France (Brossard *et al.* 2004), Germany (Weingart *et al.* 2000), the Netherlands (Pettenger 2007b), New Zealand (Russill 2008); Norway (Lindseth 2004; Hovden and Lindseth 2004), the United Kingdom (Carvalho 2005; Boykoff 2008c; Doultan and Brown 2009), and the United States (Trumbo 1996; Antilla 2005; Boykoff 2008a).

These scholars argue persuasively that climate change discourses play an important role in shaping perceptions of climate change, and responses to the issue. They assert that discursive approaches can therefore provide valuable insight into responses to climate change. It is not possible to directly experience or understand climate change. People around the world are beginning to experience the *impacts* of climate change, but the overarching rationale of the issue, and its long-term ramifications, are largely abstract and intangible (Hovden and Lindseth 2004:78). They need to be represented through concepts, terms, and the communication of scientific knowledge. Thus people's understanding of, and responses to, climate change are mediated by the information available to them, the discourses within which it is embedded, and the ways in which these discourses construct the issue (Lindseth 2006:8; Pettenger 2007a:7; Antilla 2010:2).

The climate change debate is characterised by a wide variety of alternative perspectives and interpretations. Since the late 1980s, a battle to define climate change has been waged through communication and miscommunication (Trumbo and Shanahan 2000:200). A wide range of individuals, organisations and interest groups have different opinions, ideas and beliefs about the nature of climate change and what constitutes an appropriate response

(Thompson and Rayner 1998:143; Lindseth 2006:54). Many aspects of the climate change debate are highly contested, and given the seriousness of the issue, concern with climate change discourses transcends mere semantics (Carvalho 2007:223; Risbey 2008:28). Discourses translate climate change into understandable categories, providing an explanation for why climate change is, or is not, important and showing how the issue should, or should not, be addressed (Lindseth 2004:327). As such, discourses can evoke different causes, sustain or reject different options and contribute to specific outcomes (Adger *et al.* 2001; Lindseth 2006:8; Carvalho 2007:239;). It is therefore crucial to be aware of the nature of these discourses and the options they promote or suppress (Cohen *et al.* 1998:366; von Storch and Stehr 2006:112). This thesis seeks to contribute to this literature by exploring the social construction of the issue of climate change in the Australian context.

## **1.2 THE AIM AND RESEARCH QUESTIONS**

The aim of this thesis is to investigate the social construction of climate change in Australia. In seeking to achieve this aim, three interlinked research questions are addressed:

1. What are the key discourses that inform and emanate from the climate change debate in Australia?
2. How do these discourses construct climate change?
3. How are different options for addressing climate change constructed?

Thus the focus of this study is the climate change debate in Australia. This debate is an increasingly diverse one and as such, it is necessary to outline some parameters to define the scope of this investigation. Accordingly, this study is concerned with the debate about what climate change is and what Australia should be doing to address the issue, as it took place between 1987 and 2007, with a particular focus on the crucial year of 2007, which saw major changes to national climate change policies followed by a change of government.

Implicit within both the research aim and research questions is a social constructionist theoretical framework. Social constructionism is based on the premise that the way we conceptualise components of reality depends on discourses that construct them in conflicting, often contradictory ways (Burr 2003:2-5). As such, issues are constantly being defined and redefined by different discourses in different contexts (Ife 2002:114). Discourses are shared ways of apprehending the world or a particular aspect of the world, and form powerful frameworks for understanding and action (Dryzek, 2005:8). Social constructionism argues that discourses not only influence the way that particular issues are perceived, but also shape social responses to these issues. It is therefore necessary to identify and critically analyse relevant discourses (Burr 2003:2-5).

Discourses cannot be 'seen' in their own right, so it is necessary to study texts for clues to their nature and effect. Thus, bodies of written, spoken and visual texts and the context within which they are produced, disseminated and received, form the object of analysis (Phillips and Hardy 2002:4). For this reason, this study was based on the collection and analysis of a wide range of texts, including texts produced by the media, government, international institutions, environmental organisations, industry associations and other groups.

### **1.3 THE STRUCTURE OF THIS THESIS**

Including this introduction, this thesis consists of ten chapters. The aim of Chapter 2 is to summarise relevant background information in order to contextualise the literature review and data analysis undertaken in subsequent chapters. The scientific basis of climate change is outlined, and some of the major impacts associated with climate change are discussed. The international response to climate change is then explained, with reference to key international meetings and agreements up to and including 2007.

Chapter 3 explores perspectives from the literature. First, the rationale for using discursive approaches to investigate environmental issues is explored, and the concept of environmental discourses introduced. Next, the central tenets of social constructionism are outlined, how it may be applied in environmental studies discussed, and criticisms of the approach addressed. Finally the literature exploring the social construction of climate change is reviewed. The particular value of discursive approaches for investigating

responses to climate change is considered, and the important role climate change discourses play in shaping perceptions of climate change and responses to the issue examined. The relevance and influence of both historical and contemporary climate change discourses identified within the literature are then discussed.

The aim of Chapter 4 is to review the literature exploring the climate change debate in Australia, with a particular focus on the Australian Government's domestic climate change policies and participation in the international response to climate change up to and including 2007. Three main phases are identified within this period: the emergence of the issue into the public arena, accompanied by ambitious early political commitments; the increased dominance of discourses opposed to addressing climate change and retreat from action; and a resurgence of public concern and political engagement. The key events, processes and policies associated with each phase are discussed in turn.

Chapter 5 outlines the research methodology underpinning this thesis. The theoretical framework utilised is explained and the ontological and epistemological implications of a social constructionist approach considered. The research strategy adopted is described, and parameters of the chosen case study clarified. The methods of data collection employed are then explained. Finally, the specific approach to doing discourse analysis developed and used within this thesis is discussed.

Chapters 6, 7, 8 and 9 then use the analytic framework developed in Chapter 5 to analyse the data collected. A broad overview of this data is provided in Chapter 6. In particular, it considers the quantity of relevant texts, the morphological and structural characteristics of these texts, key events, issues and themes, and the actors producing and represented in the texts collected.

Chapter 7 and 8 address the first two research questions. Specifically, Chapter 7 presents a comprehensive analysis of the discourse of climate change activism as it manifested in the Australian climate change debate during 2007, while Chapter 8 analyses the discourse of climate change scepticism during the same period. For each discourse, the main arguments and messages are explored, the actors involved identified, and the key linguistic and rhetorical devices they used to promote their arguments discussed. The positional and

relational discursive strategies, and key constructions of climate change associated with each discourse are also examined.

Chapter 9 addresses the third research question. The relative influence of the discourses of climate change activism and climate change scepticism is considered by assessing the number of texts supporting and reporting each discourse during 2007, the degree of prominence accorded to the two discourses within the media, and the extent to which they appear to have informed public opinion and political and business responses. Attention is then turned to the strategies and devices used by participants in the climate change debate to define possible and impossible options for addressing climate change, including international agreements to address climate change, potential domestic frameworks for reducing emissions, and calls for improving efficiency and reducing consumption.

Chapter 10 brings this thesis to a conclusion. The key findings of each chapter are summarised. The implications of the analysis and the original contribution of this research are then discussed. Finally, the limitations of the thesis are considered and some possible directions for future research proposed.

## Chapter 2: Climate Change and the International Response

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### INTRODUCTION

Climatic conditions have profound implications for life on Earth. Throughout the history of the planet changes in climate have occurred. Often these changes have been incremental, occurring over centuries or even millennia, and thereby allowing ecosystems and species to adapt to altered conditions. At other times, changes in climate have occurred much more rapidly, leading to mass extinctions and vastly different environments (Ochoa, Hoffman and Tin 2005:36-51). The Earth's climate system has demonstrably changed on both regional and global scales since the Industrial Revolution. An increasing body of observations gives a collective picture of a warming world and other climatic changes as a consequence of anthropogenic emissions (IPCC 2007c:2).

The purpose of this chapter is to summarise key background information relevant to this thesis. Section 2.1 will briefly discuss the scientific basis of climate change. It will describe the greenhouse effect, anthropogenic sources of greenhouse gases, changes in climate that have already been observed, and projections for future climate change. Section 2.2 will then examine the impacts of climate change. Biophysical impacts, including the melting of glaciers and rising sea-levels, retreating snow cover and sea ice, abrupt non-linear changes, and impacts on ecosystems and biodiversity will be considered. The social impacts of climate change will then be discussed, including impacts on island and coastal communities, human health, agricultural productivity, and water availability.

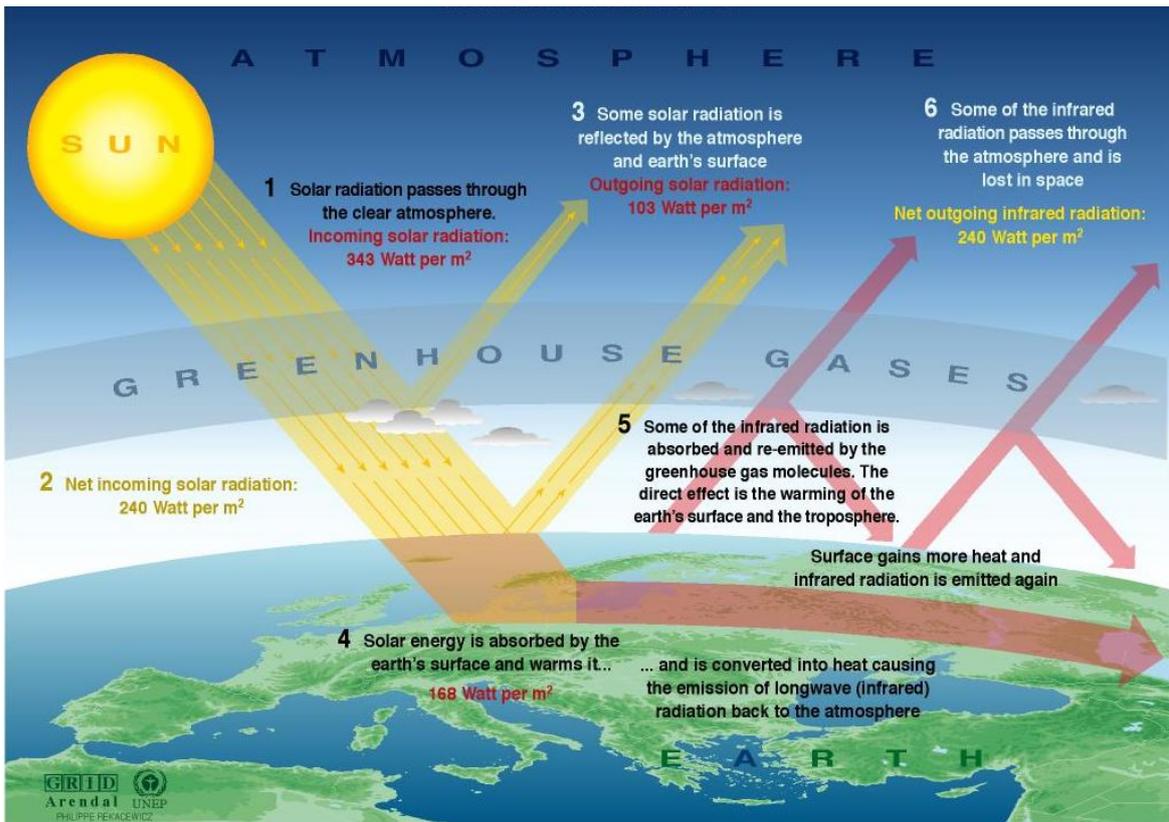
International attention was first drawn to climate change in the mid 1980s. Section 2.3 will describe the series of international meetings and agreements that followed. In particular, the United Nations Framework Convention on Climate Change (UNFCCC) and the Kyoto Protocol will be discussed, and the success of signatory countries in meeting their targets to reduce greenhouse gas emissions under the Kyoto Protocol will be considered. The Asia Pacific Partnership on Clean Development and Climate (APP), launched in 2005, will then be described. Finally, the 'Bali Roadmap' adopted at the thirteenth Conference of the Parties to the UNFCCC in Bali in 2007 will be discussed.

## **2.1 THE SCIENTIFIC BASIS OF CLIMATE CHANGE**

It has been known for over a hundred and eighty years that there is a link between the Earth's atmosphere and its climate. Scientific studies in the late 1950s began to reveal that human activities were altering the composition of the atmosphere and consequently changing the Earth's climate. Since then, the science of climate change has accelerated rapidly (Stanhill 2001). In 1988, the Intergovernmental Panel on Climate Change (IPCC) was established by the World Meteorological Organisation and the United Nations Environment Program to assess available information on the scientific basis of human-induced climate change, its potential impacts, and the options for mitigation and adaptation. The IPCC does not carry out new research or monitor climate-related data itself. Rather, its assessments are based on an exhaustive review of relevant published and peer reviewed literature (IPCC 2004:1-2). So far, the IPCC has collated four major assessments in 1990, 1995, 2001 and 2007. Each successive report has presented increasingly strong evidence that human-induced climate change is occurring, and poses serious environmental, social and economic threats. This chapter will summarise some of the findings of the most recent of these reports, the IPCC's the Fourth Assessment Report.

### **2.1.1 The Greenhouse Effect**

The warming effect of certain gases in the atmosphere was first recognised in 1827 by the French scientist Jean-Baptiste Fourier (Houghton 2004:17). In the 1890s the Swedish chemist Svante Arrhenius named this natural phenomenon the 'greenhouse effect' because it is similar to the way a glass superstructure makes a greenhouse hotter (Lowe 2005:1). Some of the radiation from the sun is reflected by the atmosphere and the Earth's surface. The remaining radiation is absorbed by the Earth. It is converted into heat and emitted back into the atmosphere as infra-red radiation. Some of this radiation passes through the atmosphere into space. However some is absorbed and re-emitted by atmospheric gases including carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), tropospheric ozone (O<sub>3</sub>), and water vapour (H<sub>2</sub>O), as illustrated in Figure 2.1 (Rekacewicz 2005). This process reduces the amount of heat lost to space and serves to keep average global temperatures about 35°C warmer than they otherwise would be, and within a range that is able to support life (Houghton 2004:14).



**Figure 2.1** The greenhouse effect. *Source:* Rekacewicz (2005).

The problem is that since the beginning of the Industrial Revolution humans have been changing the composition of the atmosphere, and the greenhouse effect is being artificially enhanced by increased concentrations of greenhouse gases. Various human activities contribute to these increases. Carbon dioxide emissions arise primarily from the burning of fossil fuels, with land-use change also making a significant contribution. Methane is a by-product of agriculture and is also leaked during the extraction and transportation of fossil fuels. Nitrous oxide arises from the use of fertilisers, fossil fuels and biomass combustion, and land clearing (IPCC 2007a:2-3).

With the exception of water vapour, all the key greenhouse gases are now significantly more prevalent than in pre-industrial times (IPCC 2007a:25-7). As shown in Table 2.1, atmospheric concentrations of carbon dioxide, have increased by more than 35%. Concentrations of methane have more than doubled in the last 200 years, and nitrous oxide concentrations have increased by nearly 20% in the same period (IPCC 2007a:25-7).

**Table 2.1 Increases in greenhouse gases.** *Source:* compiled from IPCC (2007a:25-7).

Greenhouse Gas	Natural Range Over the Last 650 000 Years <sup>1</sup>	Pre-Industrial Levels	Measured Level in 2005	Radiative Forcing <sup>2</sup>
Carbon Dioxide (CO <sub>2</sub> )	180-300 ppm <sup>3</sup>	280 ppm	379ppm	+1.66 ± 0.17 W m <sup>-2</sup>
Methane (CH <sub>4</sub> )	320-790 ppb	715 ppb	1774ppb	+ 0.48 ± 0.05 W m <sup>-2</sup>
Nitrous Oxide (N <sub>2</sub> O)	-	270ppb	319ppb	+ 0.16 ± 0.02 W m <sup>-2</sup>
Combined radiative forcing:				+ 2.30 [+2.07 to +2.53] W m <sup>-2</sup>

Also illustrated in Table 2.1 is the relative *radiative forcing* of the three major greenhouse gases. Radiative forcing is a measure of the influence that a factor has on the balance of incoming and outgoing energy in the Earth's atmosphere, and as such is an index of the importance of the factor as a potential climate change mechanism (IPCC 2007a:2). Increases in atmospheric carbon dioxide since pre-industrial times are responsible for a radiative forcing of +1.66 ± 0.17 W m<sup>-2</sup>, dominating all other radiative forcing agents. For the decade from 1995 to 2005, the growth rate of carbon dioxide in the atmosphere has led to a 20% increase in its radiative forcing (IPCC 2007a:25).

In addition to the greenhouse gases described above, there are several greenhouse gases of purely anthropogenic origins, including chlorofluorocarbons (CFCs), hydrofluorocarbons (HFCs), Perfluorocarbons (PFCs), and sulphur hexafluoride (SF<sub>6</sub>). Since the adoption of the Montreal Protocol<sup>4</sup> in 1987, emissions of CFCs have decreased, but they still have a radiative forcing of +0.32 ± 0.03 W m<sup>-2</sup>, making them the third most important radiative

<sup>1</sup> As determined from ice-cores (IPCC 2007a:3).

<sup>2</sup> The radiative forcing values in Table 2.1 are for 2005, relative to pre-industrial conditions (defined as 1750), and are expressed in watts per square metre. Positive forcing tends to warm the Earth's surface while negative forcing cools it.

<sup>3</sup> ppm (parts per million) or ppb (parts per billion) refers to the ratio of the number of greenhouse gas molecules to the total number of molecules of dry air.

<sup>4</sup> The Montreal Protocol on Substances that Deplete the Ozone Layer was adopted in Montreal in 1987, and most recently amended in Beijing in 1999. It controls the production and consumption of chemicals containing chlorine and bromine that destroy stratospheric ozone (Elliott 2004:75-8).

forcing agent. Atmospheric concentrations of the industrial fluorinated gases HFCs, PFCs and SF<sub>4</sub> are relatively small, with a total radiative forcing of +0.017 W m<sup>-2</sup>. However, emissions of these gases are increasing rapidly with the compounds being used in a wide variety of applications (IPCC 2007a:28).

### 2.1.2 Observed Climate Change

The IPCC's Fourth Assessment Report declared that:

Warming of the climate system is unequivocal, as is now evident from observations of increases in global average air and ocean temperatures, widespread melting of snow and ice, and rising global average sea level (IPCC 2007a:5).

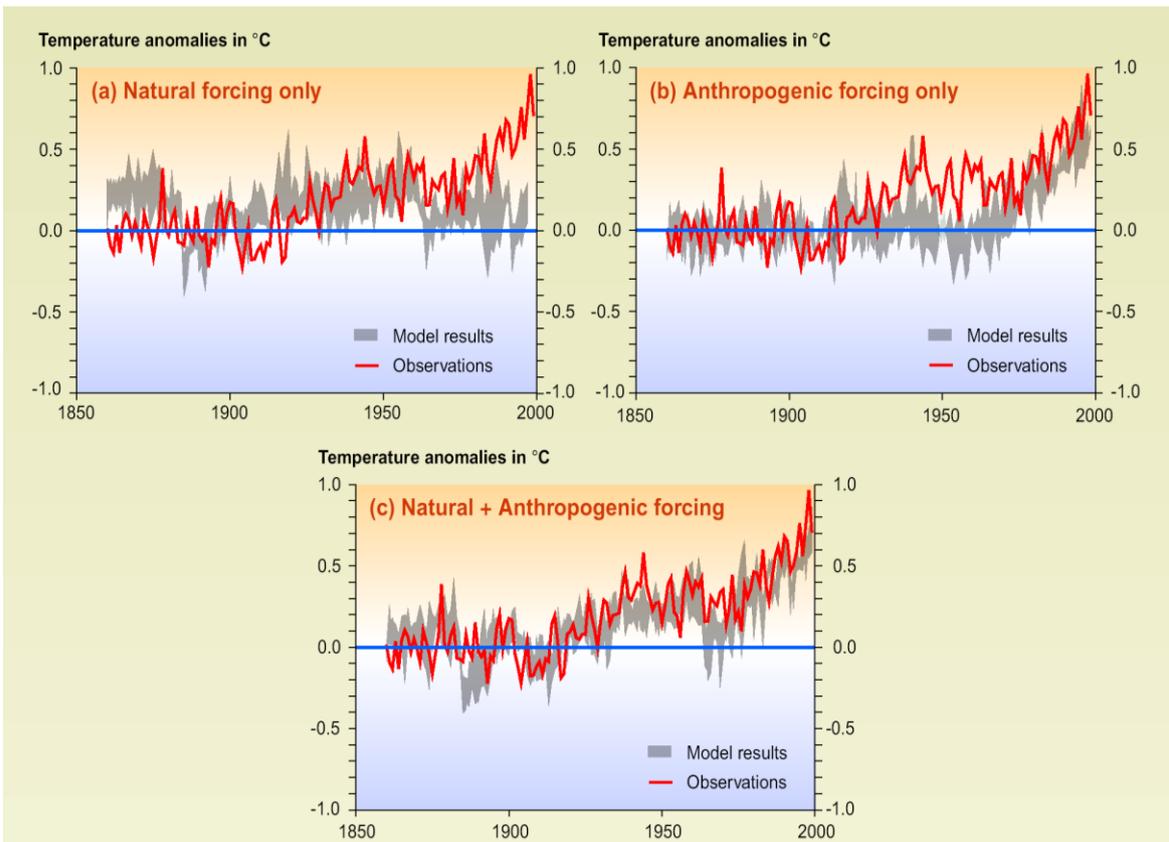
The years 2001 - 2012 were all among the 13 warmest years since instrumental record of global surface temperature began in 1850, with 2005 and 2010 the warmest years on record (WMO 2013:6). During the twentieth century, the global average surface temperature increased by 0.74°C [0.56 - 0.92°C]<sup>5</sup>. This is *likely*<sup>6</sup> to have been greater than for any other century in the last 1300 years (IPCC 2007a:5,9).

Most of the observed warming over the last century can be attributed to the increase in greenhouse gas concentrations (IPCC 2007a:10). This is clearly demonstrated by comparing simulated temperature variations with measured changes. Figure 2.2 illustrates simulated temperature anomalies due to (a) natural factors, (b) anthropogenic factors, and (c) the combined effects of these. In each case the observed temperature changes are superimposed on top, allowing for direct comparison. From (b), it can be seen that the inclusion of anthropogenic factors provides a plausible explanation for a substantial part of the observed temperature changes over the past century. The best match with observations is obtained in (c) when both natural and anthropogenic factors are included (IPCC 2001:51).

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<sup>5</sup> 0.74°C represents the IPCC's best estimate. The figures in square brackets indicate 90% uncertainty intervals. There is an estimated 5% likelihood that the value could be above the range given, and 5% likelihood that the value could be below that range.

<sup>6</sup> The use of the term *likely* in the IPCC's Fourth Assessment Report indicates an assessed likelihood of >66% probability of occurrence. *Very likely* indicates an assessed likelihood of >90%, and *virtually certain* indicates a likelihood of >99% (IPCC 2007a:3).



**Figure 2.2 Comparison between modelled and observed temperature rise since 1860.**  
*Source: IPCC (2001:50).*

Even small increases in average temperature have wide-spread effects, and many changes have already been observed as a result of global warming, including:

- Significantly increased precipitation in eastern parts of North and South America, northern Europe and northern and central Asia, and decreased precipitation in the Sahel, the Mediterranean, southern Africa and parts of southern Asia (IPCC 2007a:7).
- More frequent heavy precipitation events and flooding over most land areas consistent with warming and an observed increase in atmospheric water vapour.
- Longer and more intense droughts over wider areas, particularly in the tropics and subtropics.

- Less frequent cold days, cold nights and frosts, and more frequent hot days, hot nights and heat waves (IPCC 2007a:8).
- An increase in intense tropical cyclone activity in the north Atlantic since about 1970, correlating with the increase in tropical sea surface temperatures (IPCC 2007a:9).

The ocean has been absorbing more than 80% of the heat added to the climate system. As a consequence, the average temperature of the ocean has increased to depths of at least 3000m, causing seawater to expand and sea levels to rise. Mountain glaciers and snow cover have declined in both hemispheres, and together with losses from the Greenland and Antarctica ice-sheets, have further contributed to rising sea levels. Global average sea levels have risen 0.17m [0.12 - 0.22m]<sup>7</sup> over the twentieth century. Between 1993 and 2003 sea levels rose at an average rate of 3.1mm [2.4 - 3.8mm]<sup>7</sup> per year, nearly twice as fast as the preceding three decades (IPCC 2007a:5).

Regional changes in climate have affected terrestrial and marine ecosystems in many parts of the world and there are preliminary indications that social and economic systems have also been affected (IPCC 2001:51-5). It is projected that these changes will increase in both scale and extent with increased levels of greenhouse gas emissions.

### **2.1.3 Projected Climate Change**

The IPCC's *Special Report on Emissions Scenarios* (SRES) developed six groups of possible future greenhouse gas emissions scenarios. These encompass a range of possible future social, economic and technological conditions as outlined in Table 2.2. Under these scenarios, the projected concentration of CO<sub>2</sub> in the year 2100 ranges from 600 to 1550 ppm, compared to about 280 ppm in the pre-industrial era and about 379 ppm in 2005 (IPCC 2007a:12).

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<sup>7</sup> This represents the IPCC's best estimates. The figures in square brackets indicate 90% uncertainty intervals. There is an estimated 5% likelihood that the value could be above the range given, and 5% likelihood that the value could be below that range.

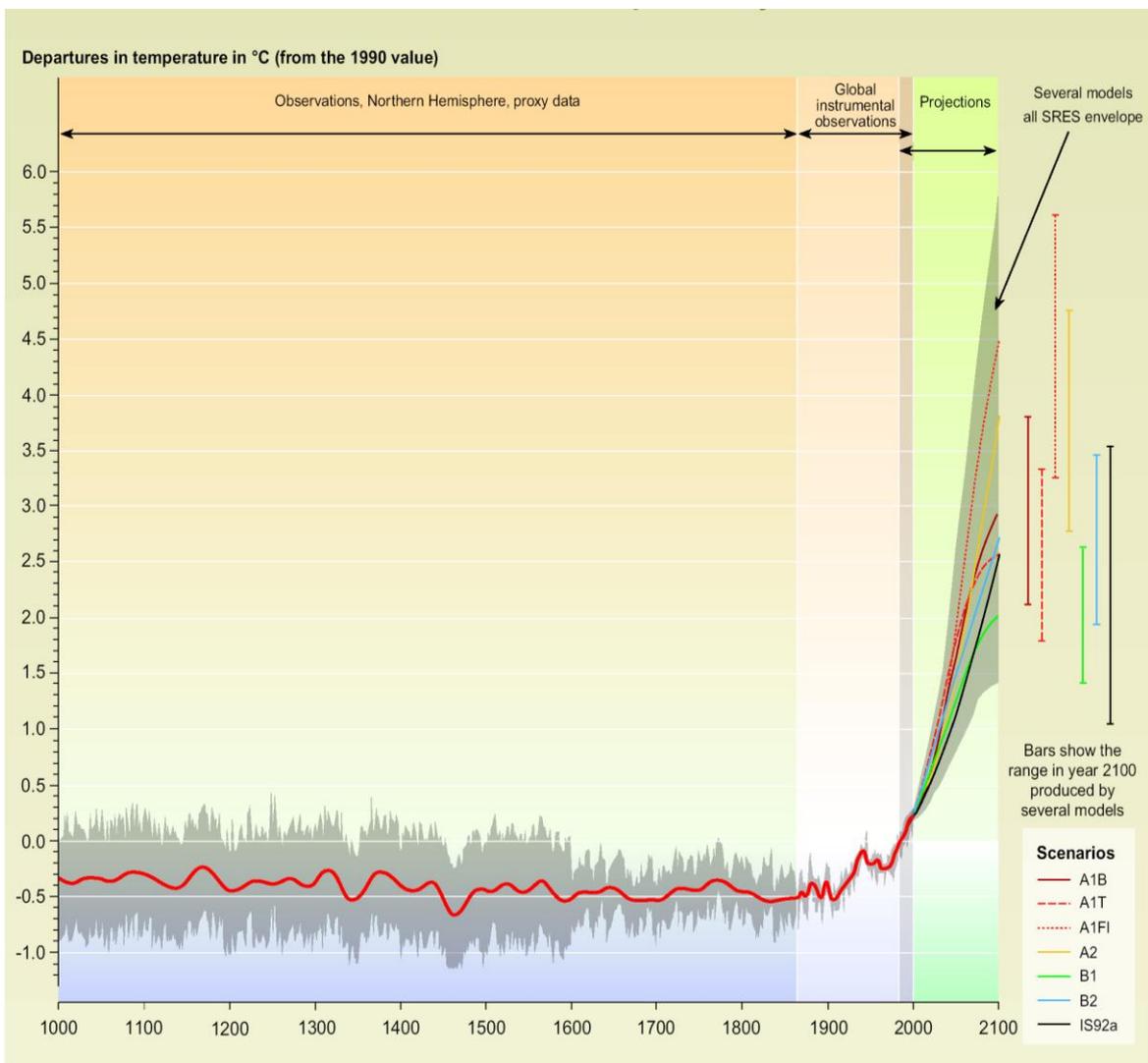
**Table 2.2 The IPCC's six groups of emission scenarios, with projected CO<sub>2</sub> equivalent concentrations for 2100.** *Source:* compiled from IPCC (2007a:12,18).

Scenario	Underlying Theme or Emphasis	Economic Development	Population Growth	Technological Change		CO <sub>2</sub> -e <sup>8</sup> in 2100
<b>A1FI</b>	Convergence among regions, capacity building and increased cultural and social interactions.	Very rapid economic growth and a substantial reduction in regional differences in per capita income.	Global population peaks in mid-century and declines thereafter.	The rapid introduction of new and more efficient technologies with an emphasis on:	Fossil-intensive energy sources.	1550 ppm
<b>A1T</b>					Non-fossil energy sources.	700 ppm
<b>A1B</b>					A balance across all sources.	850 ppm
<b>A2</b>	Self-reliance and preservation of local identities.	Economic development is primarily regionally oriented and per capita economic growth is slower than in the other scenarios.	Fertility patterns across regions converge very slowly, resulting in continuously increasing population.	Technological change is more fragmented than in other scenarios.		1250 ppm
<b>B1</b>	Global solutions to economic, social and environmental sustainability, including improved equity.	Rapid change in economic structures toward a service and information economy.	Global population peaks in mid-century and declines thereafter, as in the A1 scenario.	The introduction of clean and resource-efficient technologies contributes to reductions in material intensity.		600 ppm
<b>B2</b>	Local and regional solutions to economic, social and environmental sustainability.	Intermediate levels of economic development	Increasing global population, at a rate lower than in the A2 scenario.	Less rapid and more diverse technological change than in the A1 and B1 scenarios.		800 ppm

<sup>8</sup> CO<sub>2</sub>-e refers to carbon dioxide equivalent, the amount of carbon dioxide that would cause the same radiative forcing as a given mixture of carbon dioxide and other greenhouse gases (IPCC 2007a:945).

## Global warming

Climate modelling using the SRES scenarios projects an increase in global average surface temperatures of between 1.1 and 6.4°C by 2090 - 2099, relative to 1980 - 1999 temperatures, as illustrated in Figure 2.3 (IPCC 2007a:13). It is very likely that nearly all land areas will warm more than these global averages (IPCC 2001:8-9). Even if emissions are stabilised in the future, past and present anthropogenic greenhouse gas emissions will continue to contribute to warming for more than a millennium, due to the time scales associated with climate processes and feedbacks (IPCC 2007a:16-7).



**Figure 2.3 Variations of the Earth's surface temperature between 1000 and 2100<sup>9</sup>.**  
*Source:* IPCC (2001:140).

<sup>9</sup> From 1000 to 1860 variations in average surface temperature have been reconstructed from proxy data (tree rings, corals, ice cores, and historical records). The line shows the 50-year average and the grey region the

This rate of warming is unprecedented in at least the last 10 000 years, and has ramifications for other climatic variables including precipitation, climatic variability, and extreme events (IPCC 2001:8-9).

### *Precipitation*

At the global scale, average precipitation is projected to increase during the 21<sup>st</sup> century, with different regions experiencing increases and decreases. It is very likely that precipitation will increase over high-latitude regions in both summer and winter. Increases are also projected over northern mid-latitudes, tropical Africa, and Antarctica in winter, and in southern and eastern Asia in summer. At the same time, decreases in precipitation are likely in most subtropical land regions (by as much as 20% by 2100). Larger year to year variations in precipitation are very likely over most of these areas (IPCC 2007a:16).

In Australia, higher summer and autumn rainfall is expected in those regions that derive their rain from the southward penetration of tropical air during the Australian monsoon season. Places such as Cape York could be 20% wetter by 2030, and as much as 60% wetter by 2070. Winter and spring will generally be drier in those areas deriving rain from the eastward passage of mid-latitude high-pressure and low-pressure systems, and associated frontal storms. The south-west of Western Australia and parts of south-eastern Australia, including south-east Queensland, are expected to be as much as 20% drier by 2030, and 60% drier by 2070 (Manins *et al.* 2001:58; Lowe 2005:47). An increased risk of more frequent, persistent and intense droughts in southern areas of Australia is also likely (IPCC 2007a:896).

### *Climate variability and extreme events*

An increase in climate variability and extreme events is projected. Models project changes in daily, seasonal, inter-annual, and decadal variability (IPCC 2001:14). Possible changes in behaviour of the El Niño-Southern Oscillation (ENSO) system towards more El Niño-

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95% confidence limit in the annual data. From 1860 to 2000 variations in observations of globally and annually averaged surface temperature from the instrumental record are shown and the line shows the decadal average. From 2000 to 2100 projections of globally averaged surface temperature are shown for the six SRES scenarios (IPCC 2001:140).

like mean conditions in the tropical Pacific, could greatly increase the frequency of severe droughts in eastern Australia (Pittock 2005:257-8). There will also be changes in the frequency, distribution, intensity, and duration of other extreme weather events. It is very likely that hot days, heat waves and heavy precipitation events will continue to become more frequent, with fewer cold days. It is also likely that tropical cyclones will become more intense, with higher peak wind speeds and more heavy precipitation associated with ongoing increases of tropical sea surface temperature<sup>11</sup> (IPCC 2007a:15). Cumulatively these changes will lead to increased risks of floods and droughts in many regions, and predominantly adverse impacts on ecological systems, socio-economic sectors, and human health.

## **2.2 THE IMPACTS OF CLIMATE CHANGE**

There is a growing body of literature documenting the impacts associated with climate change. In many parts of the world these impacts are already beginning to occur. This section will outline first the biophysical impacts and then the social impacts of climate change.

### **2.2.1 Biophysical Impacts of Climate Change**

A wide range of biophysical impacts associated with the changes in climate discussed in Section 2.1 have been identified. These impacts include the continuing retreat of glaciers, rising sea levels, shrinking snow cover and sea ice extent, abrupt non-linear changes, and widespread changes in ecosystems and biodiversity, each of which will be discussed below.

#### *Glaciers and sea levels*

Glaciers are projected to continue their retreat during the 21<sup>st</sup> century. Together with the thermal expansion of the oceans, the melting of glaciers and ice-sheets is projected to cause a rise in global mean sea level of 0.18m to 0.59m by 2100, with significant regional variation (IPCC 2007a:13). These changes need to be considered in conjunction with sea

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<sup>11</sup> There is insufficient information on how small-scale extreme weather phenomena (e.g. thunderstorms, tornadoes, hailstorms, and lightning) may change (Pittock 2005:116).

level rises due to subsidence caused by land movements and removal of groundwater. In some places, total sea level rises of up to 2m by 2100 have been estimated (Houghton 2004:150). Some studies suggest that the crumbling of the Antarctic ice-sheet is already contributing significantly to sea-level rises. In West Antarctica, the Pine Island and Thwaites glaciers are losing more than 110 cubic kilometres of ice each year, three times faster than a decade ago. If they disappeared completely, they could raise sea levels worldwide by more than a metre on their own (Pearce 2005b). The last time the polar regions were significantly warmer than they are now for an extended period of time was about 125 000 years ago. At that time, reductions in the volume of polar ice resulted in sea level rises of 4 to 6 m (IPCC 2007a:9).

#### *Snow cover and sea ice*

Globally, snow cover is projected to continue to contract (IPCC 2007a:15). Australia's alpine regions have already shown declines in snow depth of as much as 40% since 1962 (IPCC 2007a:346). Sea ice is also projected to shrink in both the Arctic and Antarctic under all the SRES scenarios. In some projections, arctic late-summer sea ice disappears almost entirely by the latter part of the 21<sup>st</sup> century (IPCC 2007a:15). These changes have significant negative implications for many species living in alpine and arctic environments (IPCC 2007a:231-3; 667). The reduction in snow cover and sea ice also has the potential to accelerate global warming through altering the albedo of the Earth's surface. Albedo refers to the proportion of solar radiation that is reflected by a surface. Snow and ice covered surfaces have a high albedo, while vegetation-covered surfaces and oceans have a low albedo (IPCC 2007a:941). Thus the shrinking of snow cover and sea cover reduces the amount of radiation reflected from the Earth's surface, increasing heat absorption.

#### *Abrupt non-linear changes*

Greenhouse gas emissions in the 21<sup>st</sup> century could set in motion other abrupt, large scale, non-linear, and potentially irreversible changes in physical and biological systems over the coming decades to millennia. The likelihood of such changes increases with the rate, magnitude, and duration of climate change. Large climate-induced changes in soils and vegetation may occur, and could induce further climate change through increased

emissions of greenhouse gases from plants and soil, and changes in surface properties such as albedo (IPCC 2007a:775-7).

Continued warming will increase the melting of permafrost in polar, sub-polar, and mountain regions (IPCC 2007a:772). Over the last twenty years, a million square kilometres of permafrost in Siberia has started to thaw. As it thaws, it will release an estimated 700 million tons of methane into the atmosphere each year, effectively doubling atmospheric concentrations of the gas over the next 100 years and leading to a significant and potentially irreversible increase in global warming (Pearce 2005a).

Most models project a weakening of the thermohaline circulation of the oceans, resulting in a reduction of heat transport into high latitudes of Europe. Some suggest that beyond the year 2100 the thermohaline circulation could completely, and possibly irreversibly, shut down in either hemisphere if the change in radiative forcing is large enough and applied long enough. This would result in drastically colder conditions for parts of Europe and North America that currently experience warmer temperatures than would otherwise be expected at their latitude due to the effects of the Gulf Stream (Pittock 2005:102, 125-7).

#### *Ecosystems and species extinctions*

Ecological productivity and biodiversity will be altered by climate change and sea-level rises, with an increased risk of extinction of vulnerable species. Significant disruptions of ecosystems from disturbances such as fire, drought, pest-infestation, storms, and coral bleaching events are expected to increase. Shifts in the location of suitable climatically defined habitats may also lead to an abrupt breakdown of terrestrial and marine ecosystems (IPCC 2001:9-10). Approximately 20-30% of plant and animal species assessed so far are likely to be at increased risk of extinction if increases in global average temperature exceed 1.5-2.5°C. For greater increases in global average temperatures there are projected to be major changes in ecosystem structure and function, and species' ecological interaction and geographical ranges. These changes will have predominantly negative consequences for biodiversity, and ecosystem goods and services such as water and food supply (IPCC 2007b:11).

The progressive acidification of oceans due to increasing atmospheric carbon dioxide is expected to have negative impacts on marine organisms such as coral, and the many species that depend on coral reefs for food and breeding sites (IPCC 2007b:11). In addition, sustained increases in water temperatures, alone or in combination with other stresses, can lead to extensive coral bleaching and the death of some corals (IPCC 2007b:235). It is estimated that up to 65% of the Great Barrier Reef species in the Cairns region may be extinct by 2080 (Crimp *et al.* 2004). A significant loss of biodiversity is also projected to occur in other ecologically rich sites in Australia including the Queensland Wet Tropics, Kakadu wetlands, south-west Australia, and Australia's alpine regions (IPCC 2007b:13).

Climate change represents a significant additional stress on systems already affected by increasing resource demands, unsustainable management practices, and pollution. These stresses will interact in different ways across regions but can be expected to reduce the capacity of some environmental systems to meet the needs of communities, making some groups or countries more vulnerable to the impacts associated with climate change (Pittock 2005:123).

### **2.2.2 Social Impacts of Climate Change**

Climate change has serious social ramifications, including population displacement, threats to human health, reduced agricultural productivity, and increased water shortages. It is widely recognised that these impacts will fall disproportionately on the poorest countries of the world and poor people within all countries, further exacerbating inequalities in health status and access to adequate food, clean water, and other resources (e.g. Shukla 1999:146; Hamilton 2001:28-30; Pittock 2005:18-19). Communities in developing countries are generally exposed to higher risks of adverse impacts from climate change. Existing stresses, including poverty and unequal access to resources, food insecurity, limited infrastructure, the incidence of disease, conflict and trends in economic globalisation further increase these communities' vulnerability to climate change and limit their capacity to adapt to climate change (IPCC 2007b:19).

## *Islands and coastlines*

Half of the world's population lives in coastal zones and the lowest lying areas are some of the most fertile and densely populated. Even a fraction of a metre increase in sea level will have severe social and economic impacts (Houghton 2004:150). Many human settlements will face increased risk of coastal flooding and erosion, and tens of millions of people will face displacement. Resources critical to island and coastal populations such as beaches, freshwater, fisheries, coral reefs and atolls, and wildlife habitat will also be at risk. Particularly vulnerable are large river delta areas, such as parts of Bangladesh, areas very close to sea level like the Netherlands, and small low-lying islands in the Pacific and other oceans (IPCC 2001:73).

Even small rises in sea level add to an area's vulnerability to storm surges, and reduce the productivity of agricultural land through the intrusion of saltwater into fresh groundwater resources. It is estimated that Bangladesh will experience a one metre sea level rise by 2050. This would result in the loss of 20% of Bangladesh's habitable land and the displacement of about 15 million people (Warrick and Ahmad 1996). Many other vulnerable delta regions, especially in south-east Asia and Africa, will face similar problems. Several low lying alluvial planes are distributed along the eastern coastline of China, and a sea level rise of just half a metre would inundate an area of about 40 000km<sup>2</sup> where over 30 million people currently live (Houghton 2004:152). Half a million people live in archipelagos of small islands and coral atolls, which lie almost entirely within three metres of sea level. Half a metre or more of sea level rise would reduce their land areas substantially and some would have to be abandoned. Island nations particularly at risk include the Federated States of Micronesia, the Marshall Islands, Nieu, Kiribati and Tuvalu (Lefale 2002:20-3; Sydee 2004:1; Spash 2005:68; Hayes 2006:186).

It is virtually certain that in Australia, sea level rises will cause increased coastal inundation, erosion, loss of wetlands and salt-water intrusion into freshwater sources, with impacts on infrastructure, coastal resources and existing coastal management programmes (IPCC 2007b:521). Ongoing coastal development and population growth in areas such as Cairns and south-east Queensland are projected to exacerbate risks from sea-level rise and increases in the severity and frequency of storms and coastal flooding by 2050 (IPCC 2007b:13).

## *Human health*

Climate change is projected to increase threats to human health, particularly for lower income populations within tropical and subtropical countries. Climate change directly affects human health, through the increased incidence of heat stress. There has already been an increase in heatwave-related deaths around the world, with approximately 35 000 deaths occurring during a heatwave in Europe in August 2003 (IPCC 2007b:397). Climate change also directly impacts human health through disease, injury and death due to floods, storms, fires and droughts. There have been many major storm and flood disasters in the last two decades. In 1999, 30 000 people died from storms followed by floods and landslides in Venezuela, while 1813 people died in floods in Mozambique in 2001. During 2003, 130 million people were affected by floods in China (IPCC 2007b:398).

Populations with poor sanitation infrastructure often experience increased rates of diarrhoeal diseases after flood events. Increases in cholera, cryptosporidiosis and typhoid fever have been reported in low- and middle-income countries. The floods in Mozambique in 2001 were estimated to have caused over 8000 additional cases and 447 deaths from diarrhoeal disease. While the risk of infectious disease in high-income countries is significantly less, Hurricane Katrina in the USA in 2005 saw the contamination of waters with faecal bacteria leading to many cases of diarrhoeal illness and some deaths. Flooding may also lead to contamination of waters with dangerous chemicals, heavy metals or other hazardous substances, from storage or from chemicals already in the environment. Following Hurricane Katrina, chemical contamination included oil spills from refineries and storage tanks, pesticides, metals and hazardous waste (IPCC 2007b:398-9).

There are also a number of indirect health impacts associated with climate change. Changing temperatures have altered the seasonal distribution of some pollen species exacerbating allergenic diseases caused by pollen. Changes in climate zones have also seen the spread of vector-borne infectious diseases, including dengue fever and malaria, beyond their previous geographical range. This spread is anticipated to continue with future increases in temperature. It is projected that climate change will also affect human health indirectly through water-borne pathogens, water quality, air quality, and food availability and quality (IPCC 2007b:399-404). A study by the World Health Organization suggests

that climate change may already be responsible for up to 150 000 deaths a year from malaria and malnutrition, and that this could double by 2020 (McMichael *et al.* 2003:276).

Studies in temperate areas have shown that climate change may have some health benefits such as fewer deaths from cold exposure. However, overall it is expected that these benefits will be far outweighed by the negative health effects, especially in developing countries (IPCC 2007b:12). Actual health impacts will be strongly influenced by local environmental conditions and socio-economic circumstances, and by the range of social, institutional, technological, and behavioural adaptations made (McMichael 2005:145-8).

### *Agricultural productivity*

Up to one third of the world's croplands may be affected by changes in climate zones, coastal erosion, and salt-water intrusion of inland waterways. Shifts in climate and agricultural zones may occur more rapidly than the adaptive capacity of plants and animals, resulting in a loss of crop biodiversity and a decrease in yields (Elliott 2004:81). Warming of a few degrees or more is projected to reduce world food supplies, increase food prices globally, and may increase the risk of hunger in vulnerable populations (IPCC 2007b:275).

Models indicate that in some temperate regions potential crop yields may increase slightly with small increases in temperature, but will decrease with temperature changes exceeding 3°C. In tropical and subtropical regions, crop productivity is projected to decrease with even small local temperature increases. Increases in the frequency of extreme weather events such as droughts and floods are also projected to negatively affect crop production, especially in low latitudes (IPCC 2007b:275). Temperature increases beyond a threshold, which varies by crop and variety, can affect key development stages of some crops (e.g. spikelet sterility in rice, loss of pollen viability in maize, tubers' development in potatoes), reducing crop yields. Yield losses in these crops can be severe if temperatures exceed critical limits for even short periods (IPCC 2001:16). Stern (2007:65) argues that "declining crop yields, especially in Africa, are likely to leave hundreds of millions without the ability to produce or purchase sufficient food".

Agricultural production is projected to decline over much of southern and eastern Australia by 2030, due to increased drought. Crops in south-western Australia are likely to have significant yield reductions by 2070. Australian temperate fruit and nuts are all likely to be negatively affected by warmer conditions because they require winter chill for vernalisation (IPCC 2007b:518-9). The Murray-Darling Basin produces more than 40% of Australia's total gross value of agricultural production. It is estimated that with no mitigation the value of irrigated agricultural production in the Murray-Darling Basin will decline by 92-97% by 2100 (Garnaut 2008:130).

### *Water shortages*

Demand for water is generally increasing due to population growth and economic development. Climate change is projected to substantially reduce the availability of water, exacerbating water shortages in many water-scarce areas of the world, and exposing hundreds of millions of people to increased water stress (IPCC 2007b:16). As a result of reduced precipitation and increased evaporation, water security problems are projected to intensify in southern and eastern Australia. It is estimated that annual stream-flow in the Murray-Darling Basin is likely to fall by 10-15% by 2050 and 16-48% by 2100 (IPCC 2007b:516). Water restrictions came into force in many Australian cities during the mid 2000s, and this is likely to become increasingly common (Lowe 2005:59).

## **2.3 THE INTERNATIONAL RESPONSE TO CLIMATE CHANGE**

Atmosphere and general climate issues were addressed in a series of international conferences in the 1970s, including the Stockholm Conference on the Human Environment in 1972, the UN Desertification Conference in 1976, and the UN Water Conference in 1977. In 1979 the first World Climate Conference organized by the World Meteorological Organization (WMO) expressed concern that “continued expansion of man’s [*sic*] activities on Earth may cause significant extended regional and even global changes of climate”. It called for global cooperation “to foresee and to prevent potential man-made [*sic*] changes in climate that might be adverse to the well-being of humanity”. However, it was not until the mid 1980s that scientific concern about climate change began to translate into concerted demands for political responses on an international level (Elliott 2004:81).

### **2.3.1 Early International Agreements**

#### *The Villach Declaration*

In 1985 the International Conference on Assessment of the Role of CO<sub>2</sub> and other Greenhouse Gases in Climate Variations and Associated Impacts, was held in Villach Austria, jointly convened by the United Nations Environment Program (UNEP), the WMO and the International Council of Scientific Unions (ICSU). Scientists from 29 countries reviewed recent scientific findings including ice-core evidence of the historical changes of carbon dioxide and methane, modern evidence of changing levels of a number of greenhouse gases, experimentation with general circulation models and the growing evidence that the planet has warmed and sea levels risen during the twentieth century (Lowe 2005:5).

The Villach conference declaration was the first clear statement from scientists that the global climate appeared to be changing (Lowe 2005:5). The assembled experts announced their consensus that: “in the first half of the next century a rise of global mean temperature could occur which is greater than any in man’s [sic] history”. The conference put greenhouse gas emissions on the international agenda as the possible source of warming and recommended that UNEP, the WMO and ICSU should take action to “initiate, if deemed necessary, consideration of a global convention” (Elliott 2004:81). An Advisory Group on Greenhouse Gases was established to advance the recommendations of the Villach meeting, and ensure periodic assessments of the state of scientific knowledge on climate change and its implications (Sprinz and Luterbacher 1996:21).

#### *The Toronto Target*

In 1988 Canada organized the World Conference on the Changing Atmosphere: Implications for Global Security, attended by around 300 scientists and policy-makers from forty-eight countries (Hamilton 2001:30). The conference concluded that greenhouse gas emissions were already causing global warming, and that the issue needed to be dealt with without delay. Specifically, the conference called for global emissions of CO<sub>2</sub> to be reduced by 20% by the year 2005. It also recommended the development of a global framework convention to protect the atmosphere, and the establishment of a world

atmosphere fund financed in part by a tax on fossil fuels (Sprinz and Luterbacher 1996:13). In the aftermath of the conference in Toronto many nations, including Australia, proclaimed goals comparable to the Toronto target. However it soon became apparent that these goals were not being met, and that, in order to achieve reductions in emissions, further international action would be needed (Victor 2001:90).

### *The United Nations Framework Convention on Climate Change*

In 1990 the United Nations General Assembly established the International Negotiating Committee to produce a climate change convention. This committee met five times between February 1991 and April 1992 (Elliott 2004:82). The outcome of these negotiations, the United Nations Framework Convention on Climate Change (UNFCCC), was adopted at the UN Conference on Environment and Development held in Rio de Janeiro in June 1992, where it was signed by 154 countries, including Australia.

Countries signing the convention acknowledged that change in the Earth's climate and its adverse effects are a common concern of humankind, and committed to protecting the climate system for present and future generations. The convention highlights the global nature of climate change, calling for:

The widest possible cooperation by all countries and their participation in an effective and appropriate international response, in accordance with their common but differentiated responsibilities and respective capabilities and their social and economic conditions (UN 1992:1).

The UNFCCC emphasises that the largest share of historical and current global emissions of greenhouse gases has originated in developed countries, and that developing countries are particularly vulnerable to the adverse impacts associated with climate change. It therefore stresses the responsibility of developed countries to lead the way in undertaking immediate action towards comprehensive response strategies to address climate change (UN 1992:2,4).

The ultimate objective of the UNFCCC, as stated in Article 2, is the stabilization of greenhouse gas concentrations in the atmosphere at a level that will prevent dangerous anthropogenic interference with the climate system, within a time frame sufficient to allow

ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner (UN 1992:4). Article 4 of the convention states the commitment of signatory parties to:

- Develop and periodically update and publish national greenhouse gas inventories;
- Formulate, implement, publish and regularly update national and regional programs to mitigate climate change and facilitate adaptation to climate change;
- Promote and cooperate in the development, application and diffusion of technologies that control, reduce or prevent greenhouse gas emissions;
- Promote sustainable management and enhancement of greenhouse gas sinks and reservoirs;
- Take climate change considerations into account, in relevant social, economic and environmental policies and actions;
- Promote and cooperate in scientific, technological, technical, socio-economic and other research, systematic observation and development of data archives related to the climate system, and the exchange of relevant information related to climate change, and response strategies; and
- Promote and cooperate in education, training and public awareness related to climate change and encourage the widest participation in this process, including that of non-governmental organizations (UN 1992:5-9).

In particular, the convention requires industrial countries and economies in transition, identified as ‘Annex I nations’,<sup>12</sup> to formulate and submit regular reports detailing their greenhouse gas inventories and climate policies. These nations agreed to a voluntary goal of returning emissions to 1990 levels by the year 2000, and to provide technical and financial assistance to developing, or ‘non-Annex I’, nations (Dunn 2002:8).

Australia ratified the UNFCCC on 30 December 1992, the eighth of 189 nations to do so, and the convention entered into force on 21 March 1994. This was a rapid ratification in terms of the normal time-scale of international environmental convention processes, and some argue that this highlighted the commitment of the international community to

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<sup>12</sup> Australia, Austria, Belarus, Belgium, Bulgaria, Canada, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, Latvia, Liechtenstein, Lithuania, Luxembourg, Monaco, Netherlands, New Zealand, Norway, Poland, Portugal, Romania, Russian Federation, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey, Ukraine, the United Kingdom, and the United States of America (UN 1992:23).

addressing climate change (Taplin 1995:19). Others point to the fact that the UNFCCC contains no concrete commitments on reducing greenhouse gas emissions, and argue that it is for this reason that countries did not hesitate to ratify it (Hodgson and Barns 1998:149). Certainly it is much easier for countries to commit to aspirational targets than binding ones. However, Australia, along with the European Community and several other OECD states, *had* actually sought the inclusion of binding targets. The Australian Government expressed disappointment that the eventual Convention had not gone as far towards redressing climate change as it would have liked, partly because of the United States' non-negotiable stance on substantive commitments (McDonald 2005:223).

Its limitations notwithstanding, the UNFCCC represented a significant first step in what is essentially an evolutionary process. Taplin (1995:19) argues that its ultimate effectiveness lies in the strength of protocols developed through successive Conferences of the Parties, sessions to be held once a year to facilitate ongoing negotiations (UN 1992:12). The first Conference of the Parties or 'COP 1' was held in Berlin in 1995. Australia joined the United States in arguing that developed countries should not be subject to emissions reductions targets unless developing countries also were (McDonald 2005:223). However, despite these objections the Conference concluded that there was a need for a legally binding protocol for Annex I nations. The 'Berlin Mandate' expressed concerns about the adequacy of countries' current commitments under the UNFCCC and emphasised the need to elaborate "policies and measures, as well as [setting] quantified limitation and reduction objectives within specific time frames for Annex I nations" (Kay 1997; Christoff 1998:114).

### **2.3.2 The Kyoto Protocol**

At the third Conference of the Parties, the key aim for negotiators was to decide on clear targets for emissions reductions, thereby fulfilling the Berlin Mandate. The Kyoto Protocol was adopted on 11 December 1997, following a week of intense negotiations involving almost 10 000 participants from over 160 countries (Christoff 1998:114). The Kyoto Protocol incorporates ad hoc targets for developed countries, with Annex I signatories committing to reduce their net annual greenhouse gas emissions to between 92 - 110% of 1990 levels for the first commitment period (2008-12), as shown in Table 2.3. Developing countries remained exempt from binding targets (UN 1997:23).

**Table 2.3 Countries' greenhouse gas emissions<sup>13</sup> reduction targets under the Kyoto Protocol, relative to 1990 emissions<sup>14</sup>. Source: UN (2009).**

Country	Target
EU-15 <sup>15</sup> , Bulgaria, Czech Republic, Estonia, Latvia, Liechtenstein, Lithuania, Monaco, Romania, Slovakia, Slovenia, Switzerland	-8%
United States	-7%
Canada, Hungary, Japan, Poland	-6%
Croatia	-5%
New Zealand, Russian Federation, Ukraine	0
Norway	+1%
Australia	+8%
Iceland	+10%

The Protocol provides significant flexibility for Parties to achieve their targets. Individual countries can adopt a wide range of alternative approaches. There are no mandatory policies and measures to be undertaken; individual countries select those policies and measures best suited to economic circumstances, community concerns and other national criteria (Owen 1999:225). Emissions trading for Annex I countries was adopted in principle, and 'Joint Implementation' enables the transfer of emissions savings arising from cross-border investments between Annex I countries (Owen 1999:228). A 'Clean Development Mechanism' also allows Annex I countries to receive emissions reduction credits for project activities in non-Annex I countries (Jones 2002:113).

<sup>13</sup> Six gases are covered by the Kyoto Protocol: CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, HFCs, PFCs, SF<sub>6</sub> (UN 1997:21).

<sup>14</sup> Some of the former Eastern Bloc countries have different baseline years, including Bulgaria (1988), Hungary (average of 1985-1987), Poland (1988), Romania (1989) and Slovenia (1986) (UN 2008:3).

<sup>15</sup> The 15 States who were EU members in 1990 comprise a "bubble" whereby member countries have different individual targets, but which combined make an overall target for that group of countries, which they can distribute among themselves (UN 1997).

The Australian delegation argued strongly for the inclusion of emissions from land use change in determining the base year emissions inventory, and in the closing hours of the Kyoto negotiations was successful in inserting a sentence to this effect into the protocol (Owen 1999:226; Yu and Taplin 2000:115). As a result, the second sentence of Clause 7 of Article 3 in the Protocol became known as the ‘Australia Clause’ (Hamilton 2000:72). In most industrialised countries emissions from land clearing in 1990 were negligible. For Australia however, land clearing accounted for about 30% of its 1990 CO<sub>2</sub> emission, meaning that Australia’s generous 8% increase target effectively grew to a target of 38% increase in greenhouse gas emissions above the original 1990 baseline if land clearing was addressed (Owen 1999:226; Hamilton 2000:72-73). While the government was jubilant over the concessions it had gained, international and domestic reaction was highly critical (Yu and Taplin 2000:113). The Chair of the Kyoto Conference argued that Australia was “allowed to have its way only in the interests of unanimous agreement” (in McDonald 2005:227).

#### *The ratification process*

To enter into force, the Kyoto Protocol needed to be ratified by 55 nations, including countries that accounted for 55% of the world’s 1990 CO<sub>2</sub> emissions (UN 1997:19). The detailed rules for the implementation of the Kyoto Protocol were supposed to be finalised by the end of COP 6 at The Hague in November 2000. When this finished with the parties deadlocked, largely due to disagreements between the US-led ‘Umbrella Group’<sup>16</sup> and the European Union (EU) over the definition and extent of carbon sinks, the viability of the Protocol looked uncertain. Implementation of the Protocol suffered a major blow when the US, the world’s largest emitter of greenhouse gases, responsible for 35% of global emissions, withdrew from the process in March 2001. Australia subsequently also refused to ratify the Protocol arguing that the economic cost of implementing measures necessary to meet its target was unacceptable (Hunt 2004:159)

However, the much anticipated ‘agreement without the US’ was finally reached at the continuation of COP 6 in Bonn in July 2001. The Australian Government was particularly satisfied with the outcome of COP 6, and Environment Minister Robert Hill commented

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<sup>16</sup> An informal coalition consisting of the United States, Australia, Japan, Canada, Switzerland, Russia, Norway, Austria, New Zealand, Iceland and Ukraine.

that “Australia would not have to do anything new to meet its greenhouse reduction commitments because of the concessions it won in the Bonn deal” (McDonald 2005:228).. However despite this the Australian Government continued to refuse to ratify the protocol. Application procedures vital for the Protocol’s implementation were adopted at COP 7 in Marrakesh in October - November 2001, and the EU ratified the Protocol in May 2002 (Jones 2002:111; McDonald 2005:228). Momentum increased with Japan’s ratification in June 2002 followed by India’s decision to ratify that August. Although, as a developing country, India is not required to reduce emissions, it is expected to benefit from technology transfer and additional foreign investments into sectors like renewable energy, energy generation and reforestation projects. Following Russia and China’s ratification, the Kyoto Protocol finally entered into force on 16 February 2005 (Chasek *et al.* 2006:126).

### *Limitations of the Kyoto Protocol*

The successful ratification of the Kyoto Protocol meant that the UNFCCC retained its viability as an international regime. However, Hodgson and Barns (1998:149) highlight the weakness of Kyoto’s outcomes, pointing to fact that, under the Protocol, emissions from developed countries will only be reduced by around 5% of 1990 levels by the end of the first commitment period (2008-2012). The inherent inertia of the Earth’s atmosphere means that stabilisation of CO<sub>2</sub> concentrations will not occur for hundreds of years, and even to maintain this would require emissions to “decline to a very small fraction of current levels” (IPCC 2001:69). A 5% reduction on 1990 levels will therefore be unlikely to have any observable impact on climate change (Jones 2002:128). Indeed, the IPCC estimates that emissions will need to be cut by up to 85% to stabilise climate change (IPCC 2007c:23; Stern 2007:xi). In this context the Kyoto targets appear extremely small.

There are also concerns that many countries are failing to meet their targets. These concerns are borne out by the national greenhouse gas inventories submitted to the UNFCCC in 2008. Overall the total aggregate greenhouse gas emissions for all Annex I countries decreased by 4.7% between 1990 and 2006. However, this aggregate is distorted by the 37.0% reduction in emissions reported by economies in transition (EIT) parties<sup>17</sup>.

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<sup>17</sup> The UNFCCC identified 15 former Eastern Bloc countries “undergoing the process of transition to a market economy” granting these countries a degree of flexibility in order to enhance their ability to address climate change (UN 1992:8).

Together, the greenhouse gas emissions of the other Annex I countries increased by 9.9% (UN 2008:1). Only eight non-EIT parties achieved reductions at all, and only four of these met their reduction targets. The remaining twenty countries all reported increases in emissions ranging from 0.8% to 95.1% (UN 2008:9). The inclusion of land use, land use change and forestry (LULUCF) alters these figures marginally, with the total aggregate emissions 5.5% less than in 1990, the EIT Parties' aggregate emissions 35.0% less, and the non-EIT Parties' aggregate emissions 9.1% more than in 1990 (UN 2008:1). The inclusion of LULUCF generally reduced countries' overall emissions (with the exception of Sweden, Russia, Slovakia and Switzerland whose emissions were higher when LULUCF were included). Even using this criterion however, 17 countries' emissions increased from 1990 levels. Altogether 21 of the 40 Annex I countries had exceeded their targets in 2007 (UN 2008:10).

### **2.3.3 Asia-Pacific Partnership on Clean Development and Climate**

In January 2006, Australia, China, India, Japan, the Republic of Korea and the United States launched the Asia-Pacific Partnership on Clean Development and Climate (APP<sup>18</sup>). At its inaugural Ministerial meeting in Sydney, ministers agreed to a Charter, Communiqué, and Work Plan (Commonwealth of Australia 2006). The APP's primary purpose is to:

Create a voluntary, non-legally binding framework for international cooperation to facilitate the development, diffusion, deployment, and transfer of existing, emerging and longer term cost-effective, cleaner, more efficient technologies and practices among the Partners through concrete and substantial cooperation so as to achieve practical results (APP 2006).

As evident in this statement of purpose, the main focus of the Partnership is on technology. In particular, the Partnership promotes 'clean' fossil fuel technology:

We recognise that fossil fuels underpin our economies, and will be an enduring reality for our lifetimes and beyond. It is therefore critical that we work together to develop, demonstrate and implement cleaner and lower emissions technologies that allow for the continued economic use of fossil fuels while addressing air pollution and greenhouse gas emissions (APP 2006).

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<sup>18</sup> The original acronym used to refer to the partnership was 'AP6' in recognition of the 6 member nations. This was changed to 'APP' after Canada joined in October 2007.

The APP Charter and Communiqué emphasise the “urgent and overriding” goals of economic development and poverty eradication (APP 2006). But while these are clearly of the utmost importance to the developing nation members of the Partnership, this emphasis tends to obscure the need for Australia and the United States to make genuine commitments to emission reductions. The Charter states that the Partnership’s purposes are consistent with the principles of the UNFCCC and other relevant international instruments and intended to complement not replace the Kyoto Protocol (APP 2006). Indeed, China, India, Japan and South Korea had already ratified Kyoto. However, for the United States and Australia, who both remained outside of the Kyoto Protocol, the APP was seen by some as an attempt to deflect criticism that the two countries had failed to contribute to international attempts to address climate change (Cornwell 12 January 2006<sup>19</sup>; Hamilton 2006:6-8).

Eight public-private sector task forces were established to develop and implement action plans. Five task forces address the energy-intensive sectors of aluminium, buildings and appliances, cement, coal mining, and steel. The other three task forces focus on energy supply sectors, namely cleaner fossil energy, renewable energy and distributed generation, and power generation and transmission. A Policy and Implementation Committee was also formed and meets biannually to oversee the task forces, endorsing projects, and reviewing progress. At the Second Ministerial Meeting held in New Dehli in July 2007, Ministers welcomed Canada as the seventh partner, and recognised the projects already being undertaken by the task forces (APP 2009). These projects encompassed a range of activities including sectoral assessments, capacity building, best practice identification, and technology research and demonstration. So far seven projects have been completed and there are 146 projects currently underway, addressing such issues as:

- Managing bauxite residue in aluminum production;
- Cooperating to standardize energy efficient lighting;
- Transforming waste to fuel in cement kilns;
- Improving carbon capture technology for coal-fired power plants;
- Developing coal mining health and safety strategies;

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<sup>19</sup> This format is used throughout this thesis to reference media texts which, due to their number, are listed separately after the reference list.

- Sharing best practices in power generation;
- Promoting solar power deployment; and
- Increasing usage of cleaner steel technologies (APP 2009).

Shortly after its election in November 2007, the new Australian Government led by Prime Minister Kevin Rudd ratified the Kyoto Protocol, and Australia attended COP 13 that December as a fully participating party. As such, the significance of the APP for Australia lessened, although Australia continued to participate in the Partnership. From 31 March - 3 April 2008, Australia hosted a joint meeting of the Cleaner Fossil Energy Task Force and the Power Generation and Transmission Task Force in Melbourne. The meeting was attended by representatives from government, industry and the research community, and the agenda included providing feedback on major projects, and the establishment of working groups in the areas of Integrated Gasification Combined Cycle technology, Oxy-fuel combustion technology, and Oil and Gas (Commonwealth of Australia 2009b).

### **2.3.4 The Bali Roadmap and Beyond**

The thirteenth Conference of the Parties was held in Bali from 3 - 15 December 2007. Representatives from 189 countries participated with observers from intergovernmental and non-government organisations and the media. The key purpose of the conference was to produce a 'Roadmap' which would guide a new negotiation process to develop an international agreement to succeed the Kyoto Protocol at the end of 2012.

From the outset, tensions both within and between developed and developing countries were evident. The EU had committed to reducing its emissions to at least 20% below 1990 levels by 2020, and signalled it would be prepared to increase this target to 30% if joined by other developed countries. Early drafts of the Roadmap made reference to non-binding emissions reductions targets of 25 - 40 % in keeping with recommendations made by the IPCC (Wilkinson, Morton and Grattan 8 December 2007). However this proposal received little support from other developed countries. The United States, Canada, Russia and Japan resisted targets exclusively for developed countries, arguing that pressure needs to be put on the developing countries as well as developed nations (Wilkinson and Forbes 6 December 2007). The Australian Government also strongly opposed the inclusion of targets in the Roadmap, even though they were non-binding and merely a guideline for

further talks. Any reference to targets was omitted from the final document (Warren and Karvelas 7 December 2007; UN 2007).

China, India and many smaller developing countries maintained that developed countries need to lead the way, opposing any conditions being placed on their own emissions until the developed world has delivered deep cuts. Representing the G-77, a group of 77 developing countries<sup>20</sup>, Pakistan's ambassador warned that "deep differences" remained between developed and developing countries over the issue of whether developing countries should be subject to constraints while still struggling to alleviate poverty (Warren 17 December 2007). Others criticised developed countries for obstructing progress on addressing emissions from deforestation, with the head of the Indonesian delegation accusing developed countries of presenting "empty propaganda" and "failing to assist the developing world" (Forbes 7 December 2007; Fitzpatrick 7 December 2007). In the final stages of the conference negotiations nearly broke down when the United States refused to agree to amendments proposed by India strengthening requirements for richer countries to help poorer countries with technology to facilitate mitigation and adaptation. The UN Secretary General Ban Ki-moon made an unscheduled return to Bali to urge delegates to compromise in order to reach a consensus.

The conference eventually culminated in the adoption of the Bali Road Map. In it, the Parties to the Convention recognise that "deep cuts in global emissions will be required to achieve the ultimate objective of the convention" and emphasise "the urgency to address climate change as indicated in the Fourth Assessment Report of the IPCC" (UN 2007:3). However, it does not clarify what would constitute "deep cuts," nor the time frame over which these cuts would need to be made in order to achieve the UNFCCC's objective of preventing dangerous anthropogenic interference with the climate system (UN 1992:4). The Bali Roadmap encompasses 14 decisions about a range of issues including voluntary approaches to reducing emissions from deforestation in developing countries, and the development and transfer of environmentally sound technologies (UN 2007). However, the major breakthrough in the Roadmap, was the Bali Action Plan. This plan expresses the Conference of the Parties' decision to launch "a comprehensive process to enable the full,

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<sup>20</sup> Originally established in 1964, the G77 is the largest intergovernmental organisation of developing countries, and provides the means for developing countries to articulate and promote their collective economic interests and enhance their joint negotiating capacity on major issues within the United Nations system (G77 2012).

effective and sustained implementation of the convention through long-term cooperative action, now, up to and beyond 2012, in order to reach an agreed outcome and adopt a decision at its fifteenth session” (COP 15 in Copenhagen in 2009) (UN 2007:3). In particular, it calls for enhanced national and international action on mitigation, adaptation, and technology development and transfer including consideration of:

- Measurable, reportable and verifiable nationally appropriate mitigation commitments or actions, including quantified limitation and reduction objectives by all developed country parties, while ensuring the comparability;
- International cooperation to support urgent implementation of adaptation actions... taking into account the urgent and immediate needs of developing countries that are particularly vulnerable to the adverse effects of climate change; and
- Effective mechanisms and enhanced means for the removal of obstacles to, and provision of financial and other incentives for, the scaling up of the development, deployment, diffusion and transfer of affordable environmentally sound technologies (UN 2007:3-4).

It also highlights the need for improved provision of financial resources and investment to support these actions including creating positive incentives for developing countries to implement mitigation and adaptation strategies, mobilising public and private-sector funding and investments, and providing financial and technical support for capacity-building (UN 2007:5). Reactions to the Bali Roadmap were mixed, with many non-government organisations expressing disappointment that the conference did not make more progress on what future action will be taken, while some business organisations voiced their relief that binding targets had not been included (Fitzpatrick 7 December 2007). While the Bali Roadmap did not make a very strong statement about action on climate change, it did lay the foundation for a post-Kyoto agreement, although such an agreement is yet to be reached.

## **CONCLUSION**

The overwhelming scientific consensus articulated by the IPCC is that anthropogenic emissions of greenhouse gases are significantly altering the composition of the atmosphere and enhancing the greenhouse effect. Average global temperatures have already increased by 0.74°C and are projected to increase by a further 1.1 - 6.4°C by 2100, depending on

future emissions (IPCC 2007a:13). These increases in average temperature will have far-reaching consequences for precipitation, climate variability and the frequency of extreme events, some of which are already being experienced around the world, with more heatwaves, prolonged droughts and more frequent cyclones. The frequency and severity of these changes are projected to increase in the future, with significant biophysical and social impacts (IPCC 2007a:15).

Already, the thermal expansion of the ocean coupled with the melting of glaciers around the world, has begun to influence sea levels. Further sea levels rises will have dire consequences for ecosystems and communities situated in vulnerable coastal zones. Arctic and Alpine regions are also projected to undergo drastic changes with both snow cover and sea ice retreating rapidly. Approximately 20-30% of plant and animal species are likely to be at increased risk of extinction if increases in global average temperature exceed 1.5-2.5°C (IPCC 2007b:11). Greater increases in global average temperatures are projected to cause major changes in ecosystem structure and function, and potentially set in motion other abrupt, large scale, and potentially irreversible changes in physical and biological systems. Already, social impacts including increased threats to human health, reduced agricultural productivity and increased water stress are being experienced, and it is projected that these impacts will be exacerbated by ongoing climate change (IPCC 2007b). It is estimated that cumulatively the economic costs associated with an increase of 5-6°C would represent an average of 5-10% of global GDP (Stern 2007:ix). However this estimate fails to incorporate costs that cannot be quantified and it is widely recognised that poor countries will suffer costs exceeding global averages (IPCC 2007b:19).

By the mid 1980s it was widely recognised that the international community needed to frame a coherent response to climate change. This came in the form of the UNFCCC, signed in 1992 and ratified in 1994. This framework has continued to shape the international response to climate change and saw the development of the Kyoto Protocol in 1997. While this agreement was successfully ratified and is now in effect, its success has been mixed. There are concerns that on the one hand it is not rigorous enough to address the magnitude of the problem, and on the other, that signatory nations are not meeting the modest targets it encompasses (Stern 2007:541-2; UN 2008:10). Attention is now turning to what will replace the Kyoto Protocol, and the negotiation process launched in Bali in December 2007 to develop a new international agreement to address climate change.

## Chapter 3: Perspectives from the Literature

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### INTRODUCTION

Chapter 2 established a basic understanding of what climate change is and what some of its impacts are anticipated to be, based on current scientific evidence. It then provided an overview of how the international community has responded to the issue. The purpose of this chapter is to explore the literature that investigates how these responses are underpinned by competing discourses which construct the issue of climate change in different ways. This literature has emerged from a wider research agenda exploring environmental discourses, and as such, the first section of this chapter will discuss the rationale for using discursive approaches in environmental studies.

Section 3.1 will first consider the nature of environmental issues and introduce the concept of environmental discourses. Environmental issues are often highly contested, with many competing perspectives about both the nature of the issues and the range of solutions available. These differing perspectives can be conceptualised in terms of environmental discourses, shared ways of understanding or interpreting particular phenomena. Discursive approaches, with their scope to accommodate and analyse multiple interpretations of issues, are therefore particularly useful in environmental studies. The approach which is used in this thesis is social constructionism, and the central tenets of social constructionism will be outlined, and how it may be applied in environmental studies discussed. This approach has been subject to a range of criticisms which are important to address, and the section will conclude by considering these criticisms.

Many of scholars have argued that discursive approaches are of particular value in investigating responses to climate change, and Section 3.2 will begin by summarising some of these arguments. The second key area of agreement identified within the literature is that climate change discourses play an important role in shaping perceptions of climate change and responses to the issue. As such, climate change discourses identified within the literature will be discussed and the relevance and influence attributed to these by authors in the field considered. Two main areas of divergence are identified within the literature. The first relates to the different ways authors characterise discourses and a range of alternative

approaches will be discussed. The second and more significant disagreement relates to the type of constructionism ascribed to, and this chapter will conclude with a critique of strong social constructionist approaches to the study of climate change discourses.

### **3.1 DISCURSIVE APPROACHES TO ENVIRONMENTAL STUDIES**

Environmental studies represents a relatively new research area, encompassing all aspects of environmental issues, including physical, biological, social, political, economic and cultural dimensions (Aplin 2002:2). A key assumption underpinning environmental studies is that while a sound knowledge of the natural sciences is essential, so too is a sound understanding of the social sciences. Thus environmental studies promotes multidisciplinary and interdisciplinary research that draws upon the respective strengths of a range of fields in seeking to understand and address the many environmental challenges facing society (Aplin 2002:2).

Since the 1960s there has been a rapidly growing body of literature documenting environmental degradation at local, regional and global levels (Pepper 2004:xiii). Initial concerns about the environment were largely associated with pollution, wilderness preservation, species extinction, and the depletion of natural resources. Over time however, further concerns have emerged about energy supply, biodiversity, ozone depletion, toxic waste, the protection of ecosystems, sustainable development, environmental justice, and climate change (Hajer 1995:6; Dryzek 2005:3). It has become increasingly clear that addressing these issues is not merely a technical and managerial matter, and that knowing about environmental problems does not guarantee that individuals, businesses or governments will do anything about them (Pepper 2004:xiii).

Early environmental sociologists Catton and Dunlap (1978) were among the first to note that environmental problems have social causes and effects, and argue that social scientists can therefore help to understand and contribute to managing environmental issues (Burningham 1998:536). It is now recognised that a critical understanding of social, economic, political and cultural processes and structures is pivotal in understanding and addressing environmental issues. Thus the maturing of environmental studies has been marked by prolific scholarship exploring the complexity of relationships between society and the environment (Pepper 2004:xiii).

### **3.1.1 Environmental Discourses**

Environmental issues tend to be complex, interconnected and multi-dimensional. They often build up over long time intervals and large spatial areas (Dryzek 2005:8; Feindt and Oels 2005:162). The more complex an issue is, the larger the number of plausible perspectives there are. Thus the development and diversification of environmental concern has been accompanied by a proliferation of perspectives on environmental problems (Dryzek 2005:9). The existence and character of environmental problems, as well as how best to address them, are often contested (Burningham 1998:559; Hovden and Lindseth 2004:4). As a consequence, the environment has become the centre of heated debates and disputes both about the nature of environmental problems and about what constitutes the most appropriate response to these problems (Dryzek 2005:3).

The different ways in which environmental problems are conceptualised have significant implications for the appreciation of existing possibilities, which in turn informs decisions and actions (Carvalho 2005:2). This backdrop of competing perspectives and proposed solutions both frames and constrains responses to environmental issues. An issue might lack resonance with the public, other policy problems might be considered more pressing, or the problem may be viewed as something other than an environmental issue. It is therefore important to consider how the ways in which environmental issues are articulated shape how they are dealt with (Feindt and Oels 2005:152).

One way of undertaking this task is through identifying and analysing environmental discourses (Hajer 1995:2). A discourse can be seen to be a shared way of apprehending the world or a particular aspect of the world. Discourses draw upon values, assumptions and judgments, and employ language and imagery to develop and communicate accounts of events, issues or phenomenon (Dryzek 2005:8). Over time, different discourses develop, crystallize, diverge, and ebb and flow in prominence (Gamson and Modigliani 1989:2; Dryzek 2005:18). Some discourses emerge as the consequence of a wide range of disparate influences over time, with actors gathering around concepts and ideas that produce common understandings (Lindseth 2006:26). Others are created expressly by powerful actors seeking to promote particular interests (Herrick and Jamieson 1995:110).

Thus individuals and institutions produce and perpetuate discourses, forming 'discourse coalitions' around shared concepts and terms (Hovden and Lindseth 2004:78). Although interchange across discourse boundaries occurs, discourses are not always easily comprehended by those who subscribe to other discourses. At the same time, actors' rhetoric may suggest that they are committed to a particular discourse, but their actions reveal that they are in fact aligned to another (Dryzek 2005:8-11). On most issues, there are a range of competing discourses, and public debate can be viewed, in part, as a contest over which interpretation will prevail (Gamson and Modigliani 1989:2).

Discourses situate interests and options within the public sphere, helping to legitimate certain concepts, interpretations and practices, and marginalise others (Feindt and Oels 2005:163; Pettenger 2007a:10-1). Certain problems are included and others left out, certain actors are viewed as legitimate participants in the discourse and others excluded (Donnelly 2008:489). Thus one of the powers of discourses lies in their ability to determine the frame of reference within which public debate takes place. Discourses can both define the range of available options for resolving problems in question, and create prohibitions making it difficult to raise certain questions or argue particular cases (Hovden and Lindseth 2004:65-66). The impact of a discourse can also be seen in the policies of governments and intergovernmental bodies, and in institutional structures. Beyond affecting institutions, discourses become 'institutionalised', that is, embodied in institutions. When this happens, discourses constitute the informal understandings that provide the context for social interaction, with particular understandings of problems becoming routinised in practices and institutions (Hovden and Lindseth 2004:78; Dryzek 2005:18-19).

The premise for viewing environmental issues from a discursive perspective is seeing them as subject to discursive struggles, bound within wider social, cultural and political contexts (Macnaghten and Ury 1998:97). Discourses can be seen to condition the way environmental issues are defined, interpreted, and addressed (Dryzek 2005:8-10). Discursive approaches to environmental studies promote an awareness of the processes through which environmental problems are constructed, and seek to understand why particular understandings of environmental issues gain dominance and are seen as authoritative while others are discredited (Hajer 1995:44; Feindt and Oels 2005:168).

Environmental discourses are far from homogeneous and extend beyond environmentalism to include the perspectives and positions of the wide range of people and organisations involved in activities relating to the environment, including those hostile to environmentalism (Dryzek 2005:9). Environmental discourses are also part of a broader discursive landscape, competing with alternative discourses and interwoven with others. Feindt and Oels (2005:161) argue that “these broader discursive formations are critical to the question of if and how a situation is understood, communicated and treated as an environmental problem”. Environmental discourses play a crucial role, not only in framing the kind of problems to be dealt with, but also in constituting the range of possible options and legitimate actors for their resolution, and shaping actions taken to address them (Carvalho 2005:2; Rydin 2005:77; Lindseth 2006:26,46).

Dryzek (2005), among others, investigates the basic structure of key discourses that have dominated environmental politics (also see Hannigan 1995; Darrier 1999; Benton and Short 1999; Adger *et al.* 2001; Hajer and Versteeg 2005). At the same time, an increasing number of studies employ discursive approaches to explore specific environmental issues such as nuclear power (Gamson and Modigliani 1989; Ferdig 2001), toxic waste (Capek 1993), ozone depletion (Liftin 1994), nature conservation (Harrison and Burgess 1994), acid rain (Hajer 1995; Herrick and Jamieson 1995) transport planning (Burningham 1998), genetically modified crops (Cook 2004), wildlife management (Hyttén and Burns 2007), sustainable development (Cohen *et al.* 1998), and climate change (Carvalho 2005; Lindseth 2006). The specific theoretical framework adopted by some of these studies, and used in this thesis is social constructionism.

### **3.1.2 Social Constructionism<sup>21</sup>**

Social constructionism emerged as an inter-disciplinary approach in the 1970s. It has been influenced by a wide range of disciplines and informs research in an equally wide range of fields. In a review of the approach, Sarbin and Kitsuse (1994) trace its roots to social interactionism<sup>22</sup>, ethnomethodology<sup>23</sup> and the works of Berger and Luckmann (1966),

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<sup>21</sup> An earlier version of this section was published in a paper by the author (Hyttén and Burns 2007).

<sup>22</sup> The sociological sub-discipline of symbolic interactionism began with the work of Mead (1934) who suggested that as people we construct our identities through our everyday social interactions with each other (Burr 2003:13).

Schutz (1967), Goffman (1974). Burr (2003:15-8) also highlights the significant influence of Foucault (1972) and Derrida (1976). As a consequence of this diverse heritage, many different types of analysis are presented as social constructionist. Today, the term 'social construction' is used widely, with researchers in almost every branch of the social sciences applying constructionist principles and insights to a wide range of topics (Burningham 1998:537). Since the 1970s there have been many case studies which utilise a social constructionist perspective to explore the emergence of environmental problems (e.g.. Shoenfeld, Meier and Griffin 1979; Yearly 1992; Greider and Garkovich 1994; Burningham 1998; Adger *et al.* 2001; Dispensa and Brulle 2003; Boykoff and Boykoff 2004; Antilla 2005; Hytten and Burns 2007; Pettenger 2007b).

The terms 'social constructionism' and 'social constructivism' tend to be used interchangeably in the literature (Lindseth 2005:16). Burr (2003:19) argues that, in order to avoid confusion with Piagetian theory and particular perceptual theories, it is clearer to use 'social constructionism' for the approaches described here. There are two distinct types of social constructionism. 'Weak' social constructionism is based on the premise that the way we perceive reality is socially constructed. In contrast, 'strong' social constructionism argues that *reality* is socially constructed (Lupton 1999:29-30). Some of the implications of this approach will be discussed later in this chapter, but it is not the approach adopted in this thesis. Rather, this thesis employs 'weak' social constructionism (hereafter referred to simply as social constructionism).

The central tenet of social constructionism is that the way we conceptualise components of reality depends on discourses that construct them in conflicting, often contradictory, ways (Burr 2003:3). It is argued that "social realities are produced and made real through discourses, and that social interactions cannot be fully understood without reference to the discourses that give them meaning" (Phillips and Hardy 2002:2). In this context, the definition of the term discourse can be further developed. For example, Phillips and Hardy (2002:3-4) define a discourse as "an interrelated set of texts, and the practices of their production, dissemination, and reception, that bring ideas, concepts and beliefs into being". These ideas and beliefs in turn become established as knowledge and a powerful framework for understanding and action in social life. Discourses are not produced without

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<sup>23</sup> Ethn methodology emerged in the 1950s and 1960s and tried to understand the process by which ordinary people construct social life and make sense of it to themselves and each other (Burr 2003:13).

context and cannot be fully understood without taking into consideration this context. Discourses are always connected to other discourses which were produced earlier, as well as those which are produced synchronously and subsequently (Fairclough and Wodak 1997:277).

Texts can be viewed as the material manifestation of discourse or discursive ‘units’ (Phillips and Hardy 2002:4). They may take a variety of forms, including written or spoken words, non-verbal interactions, films, television programs, pictures, symbols or artefacts, and can be seen to be the sites of the emergence of social meaning (Denzin 1995:52; Phillips and Hardy 2002:70). Texts record in partial ways the histories of both the participants in the production of the text and of the institutions that are ‘invoked’ or brought into play (Kress 1995:122). Texts are not meaningful individually; rather it is through their interconnection with other texts, the different discourses on which they draw, and the nature of their production, dissemination and consumption that they are made meaningful. It is not possible to find ‘a discourse’ in its entirety so it is necessary to study texts for clues to the nature of the discourse. Thus, bodies of text are the object of analysis. It is also important to make reference to the social context in which the texts are found and the discourses are produced. It is this connection between discourses and the social reality that they constitute that make social constructionism a powerful approach for studying social phenomenon (Phillips and Hardy 2002:4,71).

The way that discourses construct our experience can be examined by ‘deconstructing’ constituent texts, taking them apart and showing how they work to present a particular version of the world. This involves the critical analysis of texts to examine how subjects become constructed through the structures of language and ideology (Denzin 1995:52). It can also illuminate how certain meanings gain prominence while others are obscured and provide insight into what options are considered to be acceptable and unacceptable (Pettenger 2007a:11). Revealing contradictions within texts can allow bias towards particular ideologies to be exposed and challenged (Bennett 1996:171). As such, social constructionism can facilitate the critical analysis of a wide range of social issues including environmental concerns.

A social constructionist perspective on environmental issues has several advantages over other theoretical approaches (Capek 1993:6; Hannigan 1995:30; Burningham 1998:536). Environmental debates reflect not just an absence of certainty, but rather the existence of contradictory certainties: divergent and sometimes irreconcilable sets of convictions, both about environmental problems and the available solutions (Thompson 1991:243; Feindt and Oels 2005:162-163). Environmental problems do not materialise by themselves; rather they are constructed by individuals or organizations that define some condition as problematic (Hannigan 1995:4; Dryzek 2005:7-8). Social constructionism focuses on the social, political and cultural processes through which this occurs and how those who register such claims command political attention (Hajer 1995:44; Lindseth 2006:16). It asserts that social responses to problems do not necessarily correspond to actual conditions, but to a considerable extent reflect the political nature of agenda setting (Hannigan 1995:30). Conditions may exist without being identified and treated as problems, and conversely claims made about problems may or may not be indicative of the existence or severity of a condition. Often there is no consensus about the existence or severity of environmental problems (Burningham 1998:538-43).

Widely contrasting constructions of the nature of environmental problems contribute to widely contrasting solutions being considered acceptable (Burningham 1998:554). Thus research that highlights the character of competing constructions of an environmental problem can prove useful in attempts to resolve environmental issues (Burningham 1998:560). In this context, Burningham (1998:536) argues that the results of social constructionist analyses can make a practical contribution to the management of environmental issues. Similarly, van der Heijden (2008:839) asserts that social constructionism is needed not only to make sense of global environmental problems, but also to develop a perspective for action. Lindseth (2005, 2006:68) further develops this argument suggesting that discourses can be important resources for addressing environmental issues and that an important next step for social constructionists is to find productive ways to *use* discourses in seeking to more effectively address environmental issues.

### 3.1.3 Addressing Criticisms of Discursive Approaches to Environmental Studies

A number of criticisms are levelled at discursive approaches to environmental studies. Firstly, they have been criticised as constituting a denial of the reality and severity of environmental issues (e.g. Soule and Lease 1995:xvi; Proctor 1998:353,370). Indeed in some cases strong social constructionist approaches do appear to do just that (e.g. Hulme 2008; Potter and Oster 2008; Hulme *et al.* 2009). Boykoff (2008d:89) warns of their potential to spark illusionary and counterproductive debates and enhance obfuscation. Donnelly (2008:488) also raises the concern that constructionist approaches can contribute to further alienation and suspicion about scientific knowledge about environmental issues. However, although a few people may actually think that social agreement literally produces external reality, a belief Edwards (in Schneider 2001:339) regards as “bordering on the insane,” most social constructionists reject this approach.

In most cases the aim of social constructionism is not to deny the existence of environmental issues, but to highlight that how they come to be seen as treated as problematic is an inherently social process (Burningham 1998:559-60). As such, considering environmental problems to be socially constructed does not mean that they are not real. Rather, “it means that there is not one authoritative interpretation of these events but multiple contested interpretations” (Feindt and Oels 2005:162). People interpret phenomenon and their interconnections very differently, providing plenty of scope for dispute (Dryzek 2005:10). In this context some suggest that it can be beneficial to remain ‘agnostic’ as to the existence and severity of the environmental issues being studied (e.g. Spector and Kitsuse 1977; Burningham 1998:538; Schneider 2001). Burningham (1998) convincingly uses this approach in examining the issue of noise pollution arising from a freeway development in the UK. While she does not deny that the freeway causes noise, she remains open to different viewpoints regarding whether this noise constitutes pollution or not.

This approach would not seem appropriate or useful in the context of an issue such as climate change, where there is such an overwhelming scientific consensus that the condition of climate change poses significant problems. Some prominent academics, journalists and politicians do continue to voice scepticism about whether climate change is occurring, whether it is caused by human activities, and whether it is a problem (e.g.

Lomborg 2001; Kininmonth 10 February 2007; Minchin in Murphy 17 February 2007; ; Robson and Davidson 11 May 2007; Durkin 7 July 2007; Plimer 12 July 2007). These positions and perspectives will be considered in detail in Chapter 8. Particularly until recently, scepticism has received disproportionate media coverage belying the emerging consensus and growing certainty within the peer-reviewed scientific literature, that climate change is already occurring and is driven by anthropogenic greenhouse gas emissions (e.g. IPCC 2007a,b,c). In this context, the position of this thesis is that climate change exists, is caused by anthropogenic activities and poses serious threats to both ecosystems and human livelihoods, as discussed in Chapter 2.

Another potential weakness associated with discursive approaches to environmental studies relates to the paralysis that can result from considering all discourses equally valid interpretations of reality (Head 2000:5-7). If each different discourse is regarded as equally valid, on what basis can decisions be made regarding the most effective course of action? However, Dryzek (2005:10) argues that in the analysis of environmental discourses it is possible to engage in rational, critical, comparative judgement, to apply evidence and argument, in order to highlight problematic discourses and achieve a better understanding of environmental issues. As such, discourses and constructions can be found to be internally inconsistent, poorly justified, misleading, thoroughly misguided, and damaging to the interests of society and the environment (Dryzek 2005:10). This process can arguably provide a sound basis for decision making and impetus for taking action (Lindseth 2004:334).

Finally, discursive approaches to environmental studies are criticised on the basis that the analyses they provide are overly theoretical, and lack practical relevance or application (e.g. Martell 1994:131). Schneider (2001:340) found that many deconstructionist studies are characterised by unintelligible jargon and assertions unsupported by empirical evidence. Similarly, Ungar (1992:497) suggests that social constructionists often ignore 'real-world' factors in seeing to explain phenomenon. Donnelly (2008:489) maintains that "it is difficult to see what constructivism has to offer beyond further observable constructions of the questions/answers sought". However, Burningham (1998:560) argues that clarifying competing constructions of an issue and understanding how these constructions have emerged and are maintained can play an important role or part in resolving environmental disputes and moving towards the development of appropriate and

acceptable solutions (also see Greider and Garkovich 1994:12; Bennett 1996:171). It is therefore particularly important to deconstruct responses to complex and controversial environmental issues such as climate change. A wide range of sources seek to do this, and the next section will examine this literature.

### **3.2 THE LITERATURE EXPLORING CONSTRUCTIONS OF CLIMATE CHANGE**

A range of excellent studies explore climate change discourses in different contexts. Many of these focus on climate change discourses in the media, including the media in the UK (Carvalho 2005; Carvalho and Burgess 2005; Carvalho 2007; Boykoff 2008c; Doulton and Brown 2009), the US, (Trumbo 1996; Boykoff and Boykoff 2004; Antilla 2005; Boykoff 2008a), Canada (Babe 2005), France (Brossard *et al.* 2004), Finland (Dispensa and Brulle 2003), New Zealand (Bell 1994; Russill 2008) and Australia (McManus 2000). Other studies examine climate change discourses emanating from the political domain (e.g. Lindseth 2004; Lindseth 2005; Pettenger 2007b; Hattori 2007), and the scientific community (Demeritt 2001; Risbey 2008), or a combination of these (Weingart *et al.* 2000; Hovden and Lindseth 2004). One thing these sources and many others have in common is their shared recognition of the important role played by climate change discourses in shaping social responses to the issue. For this reason, it is argued that discursive approaches are particularly valuable and that it is necessary to identify and investigate prevailing discourses and constructions.

#### **3.2.1 The Case for Using Discursive Approaches to Investigate Responses to Climate Change**

Many authors have argued persuasively in favour of the use of discursive approaches to investigate responses to climate change. Hovden and Lindseth (2004:78) argue that even more than many environmental issues, climate change cannot be directly experienced and understood. It is not possible to see or feel climate change occurring the way one might see deforestation taking place or feel photochemical smog irritating one's eyes and lungs. People around the world are beginning to experience the *impacts* of climate change, as discussed in Chapter 2. However, the overarching rationale of the issue and its long-term ramifications are largely abstract and intangible, and need to be represented through

concepts, terms and the communication of scientific knowledge (Antilla 2010:2). Thus people's understanding of, and responses to, climate change are mediated by the information available to them, and the ways in which the issue is constructed. This makes discursive approaches, with their focus on scrutinising communicative processes, particularly well suited to the study of responses to climate change (Lindseth 2006:8; Pettenger 2007a:7).

The issue of climate change is also characterised by a wide variety of alternative perspectives or interpretations (Adger *et al.* 2001:708). "Neither the seriousness of the issue nor its global scope has caused its communication among science, politics, and the media to be unproblematic and unequivocal" (Weingart *et al.* 2000:262). Rather, since the late 1980s a battle to define climate change has been waged through communication and miscommunication (Trumbo and Shanahan 2000:200). A multitude of individuals, organisations, and interest groups at the local, national and international level all have different opinions and ideas about the nature of climate change and what constitutes an appropriate response (Thompson and Rayner 1998:143; Lindseth 2006:54). Many aspects of climate change politics are heavily contested (Carvalho 2007:223). At the same time, the process of policy formation has led to less than desirable results, arguably in part because of the wide variation in the interests, interpretations, and identities of the actors involved (Pettenger 2007a:7). For this reason, Donnelly (2008:486) suggests that discursive approaches are an important tool in investigating climate change; not only because they recognise the existence of contradictory interpretations of reality, but also because they provide a framework for identifying, characterising and analysing these constructions and the discourses in which they are embedded.

Given the stakes associated with climate change, concern with climate change discourses transcends mere semantics (Risbey 2008:28). Competing discourses play an important role in shaping both public opinion and political responses to climate change. Discourses translate climate change into understandable categories, both providing an explanation for why climate change is (or is not) important, and showing how this issue can and should (or should not) be addressed (Lindseth 2004:327). As such, discourses can evoke different causes, sustain or reject different options and contribute to specific outcomes (Adger *et al.* 2001; Lindseth 2006:8; Carvalho 2007:239). The language used to define climate change is often value-laden and the terms employed have different meanings depending on who is

discussing the topic and why (Pettenger 2007a:5). Particular ways of constructing climate change emphasise and empower certain institutions and individuals and simultaneously marginalise others (Lindseth 2006:60). The establishment of key reference points in the debate strengthens the arguments associated with dominant discourses, and undermines the arguments of alternative discourses (Hovden and Lindseth 2004:56). It is therefore necessary to be aware of the discourses informing and emanating from the climate change debate (Cohen *et al.* 1998:366), and to “map and understand the social construction of climate change” (von Storch and Stehr 2006:112).

Grist (2008:297-298) argues that there is currently a lack of clarity about the values and perspectives underlying responses to climate change, and that considered and explicit clarification of these perspectives would help facilitate more effective decision making and action. In this context, discursive approaches can help to illuminate specific factors underpinning responses to climate change. For example, Doulton and Brown (2009:191) demonstrate their usefulness in highlighting the role of key events, actors, ideologies and other social and political factors in influencing the representation of climate change. Discursive approaches can also reveal actors’ strategic use of discourses within the climate change debate. In their struggle to be heard, understood and validated, actors both deliberately and inadvertently use discourses to promote their interests and preferred interpretations and solutions. A discursive perspective can reveal these manoeuvrings and assess how they shape both public debate and policy responses (Hovden and Lindseth 2004:64).

Finally, it is argued that discursive approaches can make a valuable contribution through challenging dominant climate change discourses and shedding light upon marginalised discourses (Smith 2007:198-199). Pettenger (2007a:7) emphasises that discursive approaches can help to uncover processes, actors and structures that are silenced or obscured in current constructions of climate change. It is possible to identify where assumptions are invalid and cast about for interpretations that better reflect observable phenomena and the diversity inherent in social responses (Thompson and Rayner 1998:143). As such, discursive approaches have the potential to actively contribute to addressing climate change more effectively. Lindseth (2006:54) suggests that they can provide “another lens through which we can broaden our understanding of the processes at work and perhaps make them more amenable to change”. Knowledge that von Storch and

Stehr (2006:112) argue is urgently needed to guide policy makers and the public in developing and adopting a rational response to climate change.

### **3.2.2 The Relevance and Influence of Climate Change Discourses**

This section will now turn to some of the specific climate change discourses identified within the literature, and the relevance and influence attributed to these discourses by scholars in the field. There are many different ways of classifying discourses, as illustrated in Table 3.1. Some studies take a macro-level approach, conceptualising social responses to climate change as a single discourse. Others take a micro-level approach focusing on discourses associated with one specific aspect of the climate change debate. At the same time, many authors identify and characterise multiple overlapping discourses that encapsulate to some degree the issue of climate change as a whole.

#### *Historical climate change discourses*

Climate change discourses have a much longer history than one might imagine (Grove 1994:1001). von Storch and Stehr (2006:108) suggest that their genealogy can be traced all the way back to Ancient Greece. The possibility that human activities could bring about changes in local climates was raised by Aristotle's student Theophrastus in the third century BCE (Glacken 1967:129). Modern discourses linking human activities with climate change emerged as early as the sixteenth century, largely based on empirical observations of deforestation and the impacts of drought and desiccation in European colonies (Endfield and Nash 2002:34).

Grove (1994) details the history and development of what he calls the 'deforestation-desiccation' discourse from 1500 to 1860. He examines a wide range of texts produced by the Royal Geographical Society in London, suggesting that the organisation acted as a highly formative centre of the debate about desiccation, contributing to a wide degree of consensus about the theory that deforestation was causing climate change in tropical regions (Grove 1994:1009). By the late eighteenth century there were concerns that climatic change not only threatened the economic well-being of tropical colonies in the Caribbean and Indian Ocean, but also posed hazards to the integrity and health of settler populations (Grove 1994:1003).

**Table 3.1 Different ways authors within the literature classify climate change discourses.**

Scale of Discourses Identified	Rationale	Examples of Different Ways of Classifying Discourses
MACRO	This approach investigates climate change as a single large scale discourse.	<ul style="list-style-type: none"> <li>• Cohen <i>et al.</i> (1998) identify and investigate ‘climate change’ as a single discourse, comparing and contrasting it with the discourse of ‘sustainable development’.</li> </ul>
MICRO	This approach investigates one or more small-scale discourses associated with a specific aspect of the climate change debate.	<ul style="list-style-type: none"> <li>• Grove (1994) details the history and development of what he calls the ‘deforestation-desiccation’ discourse from 1500 to 1860, a discourse also analysed by Endfield and Nash (2002).</li> <li>• Carey (2007) explores several discourses associated with glaciers and the impact of climate change on glaciers.</li> <li>• Szarka (2004) examines the discourses emerging from debates around the use of wind power to address climate change in Britain, Denmark and France.</li> </ul>
MULTIPLE	This approach investigates multiple, alternative, and sometimes overlapping, discourses within the climate change debate.	<ul style="list-style-type: none"> <li>• Weingart <i>et al.</i> (2000) explore the climate change debate in Germany between 1975 and 1995 identifying three separate discourses on climate change emanating from with science, politics, and the mass media respectively.</li> <li>• Ereaut and Segnit (2006) identify three overlapping discourses within the debate about climate change in the UK: ‘alarmism’, ‘settlerdom’, and ‘small actions’.</li> <li>• Hovden and Lindseth (2004) characterise two discourses within the political debate about climate change in Norway between 1989 and 2004: ‘national action’ and ‘thinking globally’, stressing that they are not mutually exclusive.</li> <li>• Doulton and Brown (2009) identify and discuss eight climate change discourses within the British media coverage of climate change between 1997 and 2007, ranging from ‘optimism’ and ‘opportunity’ to ‘potential catastrophe’ and ‘crisis’.</li> </ul>

Endfield and Nash (2002) suggest that in some instances at least, desiccationist discourses were ill-founded. They examine the correspondence of missionaries representing the London Missionary Society, to characterise and critique discourses surrounding nineteenth-century climate change in central southern Africa. Like Grove (1994), Endfield and Nash identify drought and desiccation as dominant themes. However, while they identify six major drought periods in the Kalahari region during the nineteenth century, they found no evidence to support the hypothesis that progressive desiccation occurred.

Rather, they argue that through their limited understanding of local climatic conditions, religious interpretation of weather events and selective acceptance of local indigenous knowledge, missionaries played a significant role in framing and informing a discourse about desiccation in Africa that was in fact at odds with their own empirical observations (Endfield and Nash 2002:38-43). Doubts about the veracity of desiccationist discourses notwithstanding, their political sway informed some of the earliest conservation policy. In 1763 British colonial authorities made provision for the gazetting of large areas of mountain land in Grenada, St Lucia, St Vincent and Tobago as forest reserves, for “the protection of the rains”, the first reserves to be established with a view to preventing climate change (Grove 1994:1003).

As discussed in Chapter 2, the warming effect of certain gases in the atmosphere was first recognised early in the nineteenth century. Scientists began theorising about anthropogenic greenhouse gas emissions and their possible contribution to global climate change during the 1890s (Weart 2008:6). Weart (2008:1-18) traces the early development of scientific ideas about global climate change. Disparate and competing theories were proposed, with some arguing that increasing global temperatures would be highly beneficial, helping crops to grow more abundantly. Others speculated about the imminent onset of another ice-age, possibly brought about by industrial pollution and anthropogenic emissions of dust (von Storch and Stehr 2006:109).

#### *Macro and micro approaches to contemporary climate change discourses*

From the late 1950s, a more coherent scientific discourse about global warming began to take shape. However, it was not until the 1980s that climate change emerged from the scientific realm into the public domain. Since then climate change discourses have

proliferated with remarkable rapidity and many scholars have sought to characterise contemporary constructions of climate change.

In doing so, some adopt what could be called a macro-level approach, conceptualising social responses to climate change as a single discourse. For example, Cohen, *et al.* (1998) investigate 'climate change' as a discourse. They argue that within this discourse, climate change has been constructed in narrowly scientific terms as a problem of atmospheric emissions largely divorced from their social context (Cohen *et al.* 1998:360). They insist that the Intergovernmental Panel on Climate Change (IPCC) and other national and international scientific bodies studying climate change have tended to focus on it as a global *environmental* crisis, to the exclusion of its social, cultural, moral, and political dimensions and their connections to other pressing issues such as hunger, poverty, and North-South inequities (Cohen *et al.* 1998:343). This argument fails to acknowledge the extensive work done by the IPCC's Working Group II which examines the impacts of climate change on different regions, considers social responses through adaptation and evaluates the key vulnerabilities to climate change including the role of multiple stressors (IPCC 2007b).

Cohen *et al.* (1998:433) argue that the discourse of climate change has proven insufficient, if not actually counter-productive, for constructing an effective response to climate change. They assert that it means that debate is constrained by an artificially narrow view of the problem and the options available, and of the importance of the socio-political and cultural context within which decisions, including climate policy decisions, will be made (Cohen *et al.* 1998:359). This study highlights one of problems associated with macro-level approaches: the tendency to over-generalise. Cohen *et al.* discuss the finite discourse they describe as if it represents the only way that climate change is perceived and presented. Clearly there are more diverse interpretations of the issue; diversity which more fine-grained approaches can better capture.

At the other end of the spectrum, Carey's analysis of the discourses surrounding glaciers provides an excellent example of a study that takes a micro-level approach, focusing on the discourses associated with one specific aspect of the climate change debate. Carey (2007) discusses how glaciers are inexorably linked to both the scientific study of climate change, and the public debate about the issue as expressed through popular books, films, television,

art, newspapers, and internet sites. He argues that this recent discourse has emerged from historical glacier perspectives, weaving together a range of historical narratives that contain multiple meanings for glaciers, including glaciers as:

- A terrifying menace and natural hazard;
- Remote and empty wilderness areas;
- Sublime scenery;
- Sites for mountaineering and tourism; and
- Sites for scientific research (Carey 2007:501-9).

Carey observes that fear of sea level rise from melting glaciers, the race to save mountain ice cores before glaciers vanish, and clearly visible evidence of glacier retreat worldwide have all propelled glaciers into the centre of the climate change debate (Carey 2007:512). These physical changes and scientific data have also fuelled a new discourse about glaciers as an ‘endangered’ phenomenon, melting ice masses in danger of disappearance. Carey (2007:513) argues that proponents of the endangered glacier discourse tend to overlook or simplify the complexities of glacier retreat, including the negative impacts of loss of glaciers for local inhabitants which paradoxically include flooding and water shortages (Carey 2007:515). Carey (2007:520) concludes that the retreat of glaciers have produced far-reaching consequences, and societies have to contend with and adapt to far reaching impacts that go far beyond the loss of sites for recreation and scientific study:

If Western glacier-saving campaigns emphasised these issues of adaptation – as well as focusing on protecting glaciers through emissions reduction and climate control – then the endangered glacier narrative would ground global warming discussion in local realities and offer a more comprehensive approach to the problem of glacier melting (Carey 2007:520).

Szarka (2004) also takes a micro-level approach in examining the discourses existing around wind power in Britain, Denmark and France. Szarka (2004:342) observes that wind power has become a symbol for green energy, and the three-bladed wind turbine has attained the status of a climate change icon. However, “wind power generates strong views” and Szarka explores the deep-seated conflict between discourse coalitions within the wind sector (Szarka 2004:317). He identifies not only a polarization between pro- and anti-wind lobbies, but also a split within the environmental movement between the proponents of wind power and conservationists concerned about detrimental effects

associated with the development of wind farms at a local level (Szarka 2004:326). However, while Szarka compares and contrasts competing claims about the potential costs and benefits of wind power, a significant limitation of his analysis is that he fails to situate these viewpoints in relation to evidence to support or rebut sometimes diametrically opposing claims about matters of 'fact' (e.g. how much energy wind power can potentially generate, or how many birds are killed by existing wind farms). As such, to a certain extent, he 'carries' rather than clarifies the discursive conflict he describes.

#### *Studies identifying and analysing multiple contemporary climate change discourses*

Between macro and micro level approaches, many authors seek to identify and analyse alternative discourses that encapsulate to some degree the issue of climate change as a whole. In some cases, studies encompass a number of these, while others seek to illuminate one particular discourse.

#### CLIMATE CHANGE DISCOURSES FROM WITHIN THE SCIENTIFIC COMMUNITY

Risbey (2008) highlights the importance of the scientific community's construction of climate change, arguing that it conditions both public views and political responses (Risbey 2008:27-8). Risbey (2008:34) discusses differences of opinion within the scientific community which he characterises as slow, naturally cautious in adopting any new or revised theory, and tending to underestimate uncertainties. He also considers the influence of the small minority of sceptical scientists, describing how some in the broader political community use the views of scientists for rhetorical cover or justification for pursuing or not pursuing particular climate change policies. While those seeking action promote the views of scientists who say that the problem is urgent, others promote the viewpoints of scientists who say that the problem is exaggerated or too uncertain in order to maintain or prolong present policies (Risbey 2008:27-8).

Risbey (2008:27-8) emphasises the significance of discourses for responses to climate change. He argues that the contemporary public climate change debate now encompasses a number of distinct discourses representing different views of the seriousness of the problem (Risbey 2008:34). Ereaut and Segnit (2006) identify three such threads in the discourse in the UK: 'alarmism', 'settlerdom', and 'small actions'. Risbey supports their

questioning of the efficacy of any of these discourses to effectively address climate change, since each, in their own way, fosters inaction through fear, dismissal, or by trivializing the issue. By arguing that the scientific view of climate change can legitimately be seen as alarming, rather than alarmist, Risbey sees the need for, and emergence of, a fourth discourse, which sees climate change as alarming if action is not taken soon. In this view, climate change looms large, but there is still time to take actions to avert larger changes. However, the large reductions in carbon emissions required to avert those changes will entail comprehensive responses, small and large. This entails a fundamental restructure in the way we generate and use energy. He concludes that this discourse is ‘alarming’ in that it sounds the alarm to alert the public to the need to change course (Risbey 2008:34).

Weingart, Engels and Pansegrau (2000) analyse scientific publications to characterise the dynamics of the discourse of climate change science in Germany from 1975-1995. They divide this discourse into three phases. The first of these was “the discovery of anthropogenic impacts on the climate” accompanied by rising concern among many scientists. Weingart *et al.* (2000:266) argue that right from the beginning of this phase the discourse encompassed the recognition that there is a problem (not just a phenomenon) and that something needed to be done. This became even more evident in the second phase they identify: “the politicisation of climate change and the closure of scientific debate”. Finally, the 1990s saw “the institutionalisation and diversification of scientific advice about climate change”. This phase saw the establishment of a broad range of institutions and committees that addressed policy-relevant questions (Weingart *et al.* 2000:269-70).

Oreskes, Conway and Shindell (2008) also explore the significant interaction between scientific discourse around climate change and political responses to the issue. They suggest that in the US, the climate change ‘debate’ was launched by the prominent physicist William Nierenberg. In 1983 he chaired a committee of the US National Academy of Sciences that released a report that reframed the issue of climate change from one of scientific concern to one of political controversy (Oreskes *et al.* 2008:113). In particular, he constructed climate change as unproblematic, by emphasising the ability of humans to successfully adapt to it (Oreskes *et al.* 2008:109). Oreskes *et al.* argue that this reframing would prove to be just the first step in what was to become a long-term project in the ‘deconstruction’ of politically inconvenient knowledge of climate change by (non-climate change) scientists.

## CLIMATE CHANGE DISCOURSES PROMOTED BY NGOS

In conjunction with the scientific community, domestic and international non-government organisations (NGOs) have played an important role in bringing the issue of climate change to prominence, forming and informing new discourses (Fogel 2007:109-10). For example, Tjernshaugen and Lee (2004) found that environmental groups in Norway have been successful in their attempts to influence Norway's foreign policy and negotiating position by framing the domestic climate change debate in Norway and shaming the Norwegian Government into changing its policies. They emphasise the ability of such groups to threaten a government's legitimacy and popular image, as well as their potential to shape domestic actors' interpretations of international commitments (Tjernshaugen and Lee 2004:ii;14). Fogel (2007:108) also notes that in the US, universities, schools, churches and unions increasingly articulated progressive climate protection discourse in the 2000s, contributing to "a growing diffusion of climate norms and policies amongst US local domestic leaders and institutions, including serious greenhouse gas emission reduction commitments".

Lindseth (2004) focuses on the discourse emanating from an international organisation, the International Council for Local Environmental Initiatives, and its Cities for Climate Protection Program (CCPP), which seeks to mobilise cities to address climate change. He analyses 11 strategic documents from the CCPP to show how it has constructed climate protection as a local issue. The premise of his study is that the issue of climate change must be translated or framed to enable actors to work with the problem in a local context, and that to initiate action, a discourse must frame the issue in a way that makes it 'solvable' (Lindseth 2004:235-6). To this end, the CCPP has framed climate change pragmatically: it is about solving problems locally and enjoying local benefits, and the CCPP promotes actions that can be taken by local government authorities to help address climate change.

However, rather than emphasising the seriousness of the issue, the program tends to focus on the co-benefits associated with emissions reductions (Lindseth 2004:332). "Climate change has been added to other rationales for energy conservation rather than providing a justification for policy action in and of itself" (Bulkeley and Betsill 2003:173). Indeed, Lindseth contends that the primary motivation of many local authorities participating in the program is not addressing climate change at all, but rather the potential co-benefits.

Climate change is discussed without reference to its environmental impacts, the risks it poses to vulnerable communities, the idea of addressing climate change as a moral responsibility, or the need for immediate action (Lindseth 2004:31-32).

The rationale for this approach can be interpreted as a deliberate attempt by the CCPP to take advantage of “the simplest way to spread a statement [which] is to leave a margin for negotiation to each actor involved. It is easier to interest more people in the claim since less control is exercised on them...” (Latour 1987:208 in Lindseth 2004:32). By integrating climate change into the broader sustainability debate, the window of opportunity is bigger and more actors can be a part of the process. However, Lindseth observes that this approach has its price, namely that “everyone will adapt the statement to his or her own experience and context, resulting in the original idea being modified” and possibly diluted. Furthermore, the CCPP’s lack of results brings into question whether the co-benefits strategy has sufficient potential to reduce emissions (Lindseth 2004:333). Lindseth (2004:332) argues that CCPP has not explicitly shown how climate change is an overarching responsibility rather than just a number or more or less loosely connected projects. He argues that there is a need to find new meaningful ways of linking local and global dimensions of climate change and integrating responsibility for addressing climate change into local climate change discourses (Lindseth 2004:336).

#### POLITICAL CLIMATE CHANGE DISCOURSES

The question of who is responsible for addressing climate change also underpins political climate change discourses at national and international levels (Carvalho 2005; Bäckstrand and Lövbrand 2007; Boykoff and Rajan 2007). Carvalho (2007:231) observes that by the mid 1990s political actors were actively seeking to control and recontextualise understandings of the issue, and political discourses came to dominate the climate change debate (also see Russill 2008). Pettenger (2007b) focuses on the Netherlands’ climate change policy from 1988 to 2006. She notes that the Dutch produce highly innovative planning documents that promote strong actions to address climate change but that often the rhetoric has not been matched to concrete policies and implementation (Pettenger 2007b:57). A common political strategy is to keep the decision suspended by referring it back to science and calling for ‘more research’ (Weingart *et al.* 2000:263). Another strategy that Weingart *et al.* (2000:273) observe in Germany is to defuse the issue into

several policy domains other than environmental policy, translating it into a multitude of small-scale measures, some of which had been planned long before and others which would be easy to implement in the future. They also identify many examples of *selective* perception and use of scientific knowledge by political actors (Weingart *et al.* 2000:274).

Hovden and Lindseth (2004) also explore climate change discourses within the political domain. They deconstruct the story of climate policy in Norway from 1989 - 2004, arguing that discourses have played an important and independent role in the development of Norwegian climate policy (Hovden and Lindseth 2004:65). Norway is often recognised as a pioneer in environmental politics. In the late 1980s and early 1990s a broad political consensus developed in Norway that climate change was a serious environmental problem and that national action for reducing greenhouse gas emissions was required (Hovden and Lindseth 2004:64). During the early 1990s a distinct shift occurred. The focus on national action was replaced by an equally committed focus on international cooperation and the Kyoto flexibility mechanisms. Hovden and Lindseth (2004:64) highlight the discursive manoeuvring around political and scientific considerations, which led to this significant change. In particular, they identify two main discourses in the Norwegian politics of climate change: “national action” and “thinking globally”, and highlight how different actors placed themselves around them and formed two discourse coalitions to influence the discursive context. Hovden and Lindseth (2004:66) stress the two discourses they identify are not mutually exclusive. The core element in this struggle is what scale the problem of climate change belongs to, and the key characteristics of these two discourses are summarised in Table 3.2.

Hovden and Lindseth (2004:70) discuss how proponents of the thinking globally discourse in Norway argued for the continued export of gas and the use of gas for power generation domestically as a way to *reduce* global greenhouse gas emissions, because Norwegian petroleum products are internationally relatively clean (Hovden and Lindseth 2004:74). By 1995, this was not only the view of the petroleum industry, but was also enshrined in government policy. Politicians began to refer to the international dimension in order to re-frame the climate issue, and justify the expansion of Norwegian petroleum operations and the building of gas-based power stations (Hovden and Lindseth 2004:70). Opponents to this discourse, including environmental organisations, mobilised around the discourse of national action. Despite its relatively marginal status, it managed to continue to keep a

place as a reference point in the debate, providing a basis for ongoing proposals for more national action to cut greenhouse gas emissions (Hovden and Lindseth 2004:75-76). Hovden and Lindseth (2004:78) demonstrate how different policy options can be derived from the two discourses, concluding that “the tensions between these two views of the climate issue will remain at the centre of climate politics, not only in Norway, but also internationally” (Hovden and Lindseth 2004:77).

**Table 3.2 Two climate change discourses identified by Hovden and Lindseth (2004:77).**

Discourse	National Action	Thinking Globally
Aim	Curb (inter)national emissions	Curb international emissions
Motive	National moral obligation to lead by example	Cost-effective reductions in emissions internationally
Policy Focus	National/International	International
Principle Actors	NGOs, Socialist Left Party, Centre and Christian Democratic Parties, Youth Parties	Business, trade unions, Labour Party, petroleum industry
Main Policy Instrument	National instruments for reductions in GHG emissions	Kyoto mechanisms
Complexity	Low (e.g. reduced national emissions)	High (e.g. increased national emissions lead to decreased international emissions)
Brokerage	High and completed	Low and unfinished
Ethics	Deontological	Consequential

Carvalho (2005) explores political climate change discourses in the media, systematizing the discursive strategies of both political actors and the press. In particular, Carvalho (2005) focuses on representations of climate change politics in the British ‘quality’ press, between 1985 and 2000. During this period *The Guardian*, *The Independent*, *The Times*, and *The Observer* collectively published 3697 articles in which climate change was a main

theme. Carvalho divides this coverage into three main phases based on trends in the volume of coverage and corresponding discursive transformations that took place:

- 1988-1990: The transformation of climate change into a global political issue;
- 1991-1996: The objectivation of climate politics; and
- 1997-2000: The diffusion of responsibility for climate change (Carvalho 2005:4).

Across all three periods, Carvalho found that the government's discourse had a strong and almost constant effect of structuring the press's discourse. This is not to say that the government received uniform endorsement from the media<sup>24</sup>, but rather, that it effectively set the terms of the debate (Carvalho 2005:19). Prior to 1988, references to climate change in the British press were very sparse and had a strictly scientific focus. This changed in September 1988. In what Carvalho (2005:6) describes as a 'critical discourse moment', the then British prime minister Margaret Thatcher gave a famous speech to the Royal Society. In it she dramatically constructed climate change as a major threat, stating that humanity had "unwittingly begun a massive experiment with the system of the planet itself" (Thatcher in Carvalho 2005:4).

Thatcher effectively transformed climate change from what had previously been an essentially scientific matter into a political issue. Following this statement there was an enormous increase in the volume of press coverage of climate change. Emphasis on risk associated with the problem, especially sourced from officials, increased in media reports, generating a sense of urgency and constructing an image of crises (Carvalho 2005:4). Carvalho argues that rather than ignoring growing public concern about climate change, Thatcher sought to control the definition of the issue and set the agenda through several high profile interventions. She used climate change as a useful justification for maintaining and increasing investment in nuclear power. By discursively seizing climate change and promoting nuclear energy as a solution, Thatcher's government not only justified further investment in nuclear power but also pre-empted the possibility of others claiming energy efficiency as a response to the problem, which could be detrimental to the plan to privatise

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<sup>24</sup> In general Carvalho (2005:20-1) found that *The Times* strongly sanctioned Conservative governments, *The Guardian* consistently challenged Conservative governments and *The Independent* sometimes reinforced but was mainly critical of the Conservative views.

electricity as the prospects of high levels of consumption were needed to attract investors (Carvalho 2005:5).

In 1991, John Major replaced Margaret Thatcher as prime minister. He made considerably fewer public pronouncements on climate change than his predecessor, and 1991-1996 was characterised by a substantial decrease in media coverage of the issue. Climate change moved into the realm of political regulation at the national and international level (Carvalho 2005:9-11). The almost-silence of the British quality press legitimised and consolidated the options promoted by the Conservative Government, passively aiding their struggle for credibility. Carvalho argues that discursive reconstructions in the media in this phase contributed to the ‘objectivation’ of the politics of climate change, “particular, non-necessary constructions became social ‘objects’, insofar as they acquired a ‘natural’ and ‘fixed’ appearance” (Carvalho 2005:12-3).

In May 1997, the Labor party led by Tony Blair came into office. Blair and his government sought to position themselves as proactive in relation to climate change, and 1997 - 2000 saw an unprecedented rise in media coverage. Blair emphasised the idea that addressing climate change is a win-win situation: “there is money to be made and there are jobs to be created” (Blair in Carvalho 2005:14), and his government was constantly engaging with and building partnerships with other actors, and attempting to construct an image of consensus and inclusiveness. Carvalho notes that within this discourse there is a blurring of agency: the responsibilities of the government, business, and the public are not made clear. This strategy served to diffuse or transfer responsibility away from the state to business and the public, while simultaneously pre-empting and invalidating opposition and criticism (Carvalho 2005:15).

#### CLIMATE CHANGE DISCOURSES IN THE MEDIA

Doulton and Brown (2009) also investigate the construction of climate change in the UK’s ‘quality’ newspapers, with a particular focus on “climate change and international development discourses”. More specifically, their analysis is based on 158 articles published in four newspapers between June 1997 and June 2007. They argue that this relatively small number of relevant articles is an indicator of the low priority given to the implications of climate change for developing countries and poverty alleviation, both

reflecting public interest, and shaping public understanding and, to an extent, public policy (Doulton and Brown 2009:201). Doulton and Brown identify five overarching themes or general stances regarding climate change and international development then describe eight specific discourses as outlined in Table 3.3.

**Table 3.3 Eight climate change discourses identified by Doulton and Brown (2009:193).**

Stances	Discourses
Climate change will be beneficial for development	- Optimism: climate change will be beneficial
Climate change is a low priority for development that should be addressed as it occurs (other development issues should be tackled first)	- Rationalism: other development issues are more important, we should deal with climate change as it occurs
Mitigation is the key to preventing serious consequences for development	- Ethical mitigation: the West must lead - Self-righteous mitigation: cutting emissions is futile unless China and India cut theirs
Climate change is a crisis which must be tackled urgently	- Disaster strikes: look what's happening already, something must be done - Potential catastrophe: rich must act soon, but no need for upheaval - Crisis: the only potential saviour is upheaval
Overcoming climate change is an opportunity to help the poor	- Opportunity

Each discourse varies dramatically in its cast of heroes and villains, the rhetorical devices used, and the solutions offered (Doulton and Brown 2009:195). Doulton and Brown found that 'potential catastrophe' was by far the most common discourse with 51 confirming articles, well over double the nearest competitor which was 'rationalism' with 22 articles. 'Opportunity' was found to be the least robust of the discourses with few conforming articles (Doulton and Brown 2009:195-7). Like Carvalho, Doulton and Brown (2009:198) observe peaks in media coverage associated with key events such as major climate conferences. They also note the strong influence of individual actors on particular

discourses, pointing to the dominant role played by Bjorn Lomborg in the ‘rationalisation’ discourse. Other discourses rely on broad classes of actors, with NGOs particularly important for the crisis discourse (Doulton and Brown 2009:201). Overall, Doulton and Brown observed a marked tendency to use NGOs, rather than the scientific community, as ‘sources of authority’. Scientific papers were rarely used as the basis for articles, with the exception of the IPCC reports, particularly within the ‘potential catastrophe’ discourse (Doulton and Brown 2009:210). Divergent coverage between the four newspapers was found to be roughly aligned with their underlying ideologies, supporting the argument that the ideologies of different papers influence their coverage of climate change. Across all four papers there was very little discussion of the complex interplay of factors that will influence vulnerability and adaptation to climate in the developing world, nor the agency of poor people in dealing with the impacts of climate change (Doulton and Brown 2009:210-1).

Boykoff (2008c) also explores climate change discourses in the British press, although he examines four daily tabloid newspapers *The Sun*, *The Daily Mail*, *The Daily Express*, and *The Mirror*. From a total of 4945 articles published in these papers between 2000 and 2006 with the keywords ‘climate change’ or ‘global warming’, Boykoff selected a random sample of 974 articles. He then assigned a frame to each article based on who was quoted and/or referred to, the terms used, and the relationships between clusters of messages (Boykoff 2008c:554-5). The four frames Boykoff identified are summarised in Table 3.4.

As shown below, Boykoff found that news articles on climate change in the British tabloid press were most often framed through weather events and charismatic megafauna, followed by political or economic frames, with reporting on the action and claims of political actors accounting for about twice the amount of this coverage than was afforded to economics and business activities. Popular culture dominated culture and society frames, followed by transport issues, and new studies or discoveries were most frequently featured within articles within scientific frames (Boykoff 2008c:557). In some cases, Boykoff (2008c:560) found commentary regarding climate change to be deliberately whimsical or contrarian. Across all the newspapers, journalists and editors tended to focus on the movements and rhetoric of individual actors or events at the expense of attention paid to questions such as the ethics surrounding differentiated vulnerability and abilities to cope with climate change (Boykoff 2008c:555).

**Table 3.4 News frames for climate change coverage identified by Boykoff (2008c:556).**

Frame	Percentage of Articles Dominated by this Frame
<ul style="list-style-type: none"> <li>• Meteorological / Ecological               <ul style="list-style-type: none"> <li>- weather events (e.g. heat waves, droughts, floods)</li> <li>- biodiversity (e.g. plants and animals)</li> </ul> </li> </ul>	33%
<ul style="list-style-type: none"> <li>• Political economic               <ul style="list-style-type: none"> <li>- political actors (e.g. UN meetings, rhetoric, action)</li> <li>- economics and business</li> </ul> </li> </ul>	27%
<ul style="list-style-type: none"> <li>• Culture and society               <ul style="list-style-type: none"> <li>- popular culture (e.g. celebrity movements, royal family, films and books)</li> <li>- justice and risk, public health (ethics, inequality, and adaptation).</li> <li>- transport</li> <li>- public understanding, knowledge, education (e.g. poll results, consumer reports)</li> </ul> </li> </ul>	20%
<ul style="list-style-type: none"> <li>• Scientific               <ul style="list-style-type: none"> <li>- discoveries, fundamentals, new studies</li> <li>- science funding and processes</li> <li>- applied science, technologies (e.g. renewables)</li> </ul> </li> </ul>	11%
<ul style="list-style-type: none"> <li>• General               <ul style="list-style-type: none"> <li>- Other</li> </ul> </li> </ul>	9%

Across the Atlantic, studies found similar trends in the US media, although some contend that overall US reporting on climate change has been weaker than that in the UK (Boykoff 2007; Antilla 2010:10). Antilla suggests that this is partly a result of ‘self censorship’ by the US media. Trumbo (1996:281) draws attention to the important role journalistic discretion plays in shaping the construction of climate change in the media, particularly through decisions about how much attention to give the issue and which sources to use. Boykoff and Boykoff (2004) found that journalistic norms and practices, particularly that of ‘balanced reporting’, have contributed to a significant divergence of popular discourse from scientific discourse. ‘Balanced reporting’ has seen journalists offering climate change scientists and climate change sceptics roughly equal space to air their views, greatly amplifying the discourse of scepticism as a consequence (Adger *et al.* 2001:707; Boykoff and Boykoff 2004:126-7).

In her analysis of 544 articles published in the US press between 2003 and 2004, Antilla (2005) found many examples of journalistic ‘balance’ that lead to bias. She also found that some news outlets repeatedly used climate sceptics with known fossil fuel industry ties as primary definers. She concludes that the media perpetuate the myth that there is no international scientific consensus on climate change, contributing to ongoing public confusion about the issue (Antilla 2005:350). Boykoff (2008a:7) observed similar trends in his analysis of 3 US television networks’ coverage of climate change between 1995 and 2004, with 70% of television news segments providing ‘balanced’ coverage perpetuating an informational bias and amplifying the appearance of uncertainty and debate. Boykoff and Boykoff (2004:134) argue that “this bias, hidden behind the veil of journalistic balance, also creates both discursive and real space of the US Government to shirk responsibility and delay action regarding global warming”.

Dispensa and Brulle (2003:100) found that this significant distortion, and the systematic inclusion of the opinions of climate change sceptics in the US media, was not necessarily reflected in other countries’ media. In particular, they compare the media discourse around climate change in the US, to media discourses in Finland and New Zealand. They found that 59% of the articles about climate change in the *New York Times* and the *Washington Post* during 2000 expressed uncertainty about whether anthropogenic climate change exists, in marked contrast to only 11% of articles in *The New Zealand Herald* and 0% of articles in the Finnish newspaper *Helsingin Sanomat* (Dispensa and Brulle 2003:96). Dispensa and Brulle (2003:98) suggest that the dominance of the fossil fuel industry in the US has had a significant impact on the degree of bias evident in the US media, observing the fossil fuel industry does not have a comparable presence in Finland nor New Zealand.

There are far fewer studies investigating climate change discourses in the media outside the UK and the US. But they support Dispensa and Brulle’s finding that media discourses vary considerably between different countries. Weingart *et al.* (2000:278) describe Germany’s media discourse on climate change as presenting a fairly coherent and consistent message over time and across sources. In the Canadian context, Babe draws attention to a different sort of bias: bias by omission. Babe (2005:215-216) identifies key statements and articles that were not published in the large daily Canadian Newspaper the *Globe and Mail*, and notes that two key journalists, the newspaper’s earth science and

environment reporters, were “all but silenced” in September 2000 during the debate about whether Canada should or would ratify the Kyoto Protocol.

Babe also highlights the significant conflict of interests underpinning media discourses about climate change. He observes that about 80% of newspaper revenues derive from advertising, as opposed to subscriptions or single copy sales:

From a business perspective, the editorial content of a newspaper, is the cost publishers incur to assemble readers for advertisers; newspaper owners sell readership to advertisers, and ‘content’ is their cost of producing this ‘audience commodity’, and should not detract from, and indeed ideally should contribute to, the effectiveness of the surrounding ads (Babe 2005:189).

Advertising accounted for 44.5% of the content of the three papers Babe analysed. Consumption and lifestyle articles accounted for 35.5% whereas news and commentary comprised less than 20% of the printed space (sports accounting for the remaining 10%) (Babe 2005:190-1). Babe therefore argues that in considering media discourses it is important to take into account the range of greenhouse-gas intensive goods and services being promoted by advertisers in both the print and television media.

Bell (1994) considers the relationship between public understanding about climate change and media discourses in New Zealand. He stresses that people are not passive receivers of media input. They interpret content in terms of their own viewpoints, accepting information which reinforces their existing stance (Bell 1994:38). However, he observes that journalistic confusion regarding ozone depletion and climate change in the late 1980s and early 1990s translated into public confusion about the issue (Bell 1994:47). Bell emphasises the risks of confusing the causes and effects of climate change “If you do not understand what is causing climate change you won’t know what needs to be done about it or may think it is already being addressed by actions that don’t actually help” (see Bell 1994:59).

Russill (2008) also analyses media discourses in New Zealand. He focuses on the discursive strategies evident in just one day’s media coverage: 17 June 2005, when the New Zealand Government estimated a \$307 million liability under the Kyoto Protocol in its 2005 financial statement, and greenhouse gas emissions became a serious public concern. Russill remarks upon the New Zealand Government’s success in structuring

media coverage and public discourse (noting that government documents clearly present a conscious communication strategy for achieving their goals) (Russill 2008:144). He argues that in turn “press institutions helped structure perceptions on climate change to advantage very narrow ways of responding to the problem”. Difficulties associated with the Kyoto Protocol were seized for political advantage by the industry lobby and its expert consultancy, and their perspective was amplified at the expense of greater public understanding of the implications of climate change (Russill 2008:149).

McManus analysed 6 Australian newspapers<sup>25</sup> to determine how they reported the Fourth Conference of the Parties to the UNFCCC in Buenos Aires, during the period 2 - 17 November 1998. He found that the event was essentially made a non-issue by the lack of media coverage. “The absence of reporting on climate change in much of the mainstream daily media clearly diminishes the potential for debate and public concern” (McManus 2000:306). McManus argues that the lack of media coverage also strengthened the position taken by the Australian Government, a position condemned by environmentalists and by many countries. This occurred through the processes of ‘embodiment’ (the uncritical acceptance of certain assumptions) and ‘distanciation’ (the separation of cause and effect in regard to an issue). He suggests that these complementary processes both shape the construction of the issue and affect the willingness of and possibility for people to engage with it (McManus 2000:307). The negotiations in Buenos Aires were constructed as happening elsewhere, with little attempt to link the causes of climate change with the daily lives of people in Australia. The Australian Government remained relatively unchallenged in its attempt to define and negotiate climate change actions using the argument of protection of the national economy (McManus 2000: 316).

### **3.2.3 A Critical Review of Strong Social Constructionist Studies**

All the sources discussed above share to some extent a weak social constructionist perspective. In some instances authors explicitly state their position on the constructionism spectrum. For example, Lindseth (2006:51) unequivocally rejects what he calls “extreme constructionism” emphasising that there is “physical reality independent of our understandings or perceptions” and taking as a precondition that climate change is actually

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<sup>25</sup> *The Sydney Morning Herald, The Age, The Courier Mail, The Australian, The Daily Telegraph, and the Green Left Weekly* (McManus 2000:306).

happening. Similarly, other authors clearly state that they recognise that climate change is a real phenomenon posing real challenges (e.g. Carey 2007:501; Risbey 2008:27). However, as highlighted by Rosa and Dietz (1998:422), strong social constructionists tend to be far more sceptical of the validity of claims about the nature of climate change.

For example, Potter and Oster (2008:117) describe climate change as “essentially unrepresentable”, arguing that “climate change, in a very powerful sense, has a continually constituted existence in narrative... in this sense, climate change *is* the story, rather than something materially coherent that narrative merely reports upon” (Potter and Oster 2008:121). As such, Potter and Oster appear to conflate the physical manifestation of climate change with human experiences and interpretations of it. However, notwithstanding their ontological position, they do recognise the significance of climate change, using their analysis to highlight weaknesses in the information-deficit model in environmental communication research and propose ways to achieve more effective public engagement with the issue.

In contrast, some strong social constructionists take the position that climate change is *only* problematic because of the way that the issue is constructed. Hulme, Dessai, Lorenzoni and Nelson (2009:199-201) review three different ways in which climates may be constructed: through statistical constructs such as the idea of “climatic normals”; through the diverse framings of social, economic and cultural systems; and through the varied mental abilities of individuals to recall climatic events in the past and to imagine climatic events in the future. They argue that these three approaches open up the possibility for climates to change, through changing statistical normals, changing cultural contexts and practices, and changing memories, perceptions and expressions. Climate, they argue, therefore becomes “subject to multiple expressions of instability”. Hulme *et al.* (2009:201-5) go on to discuss the way that using different baselines changes the magnitude of measured and predicted changes in temperatures. Obviously the more recent the baseline the less dramatic the change measured. They further present a ‘rolling baseline’ which they suggest might “almost eliminate climate change as a physical reality – certainly substantial climate change – through a conjuring trick of our changing perceptions” (Hulme *et al.* 2009:206). They conclude that while:

It may be possible to physically engineer a stable (global) climate through some purposeful series of policy interventions to moderate and control global greenhouse gas emissions... the cultural and psychological processes to which people's expectations for future climate are subject would always offer the means for further climatic de-stabilisation. The interactions between culture, memory and meaning are not stable... these interactive processes of social adjustment could allow for 're-stabilising' a climate which remains physically changing.

Like Potter and Oster, Hulme *et al.* (2009) seem to confuse 'climates' with *constructions* of climates. Clearly, changing statistical normals, cultural contexts and memories and expectations are not going to change the physical climate, only the way it is constructed or perceived. They also seem to miss the point that it is not what is, or is not, normal that is the issue. Rather, it is the indisputable trends deviating from any conception of normality that are of concern. All that is necessary to avoid the confusion they allude to, is a clearly defined baseline. Hulme *et al.* (2009) also completely neglect to consider the impacts associated with a physically changing climate. While a physically changing climate may be *viewed* as stable, this is not going to prevent the biophysical and social impacts associated with climate change outlined in Chapter 2.

Hulme (2008) further develops the idea of 'solving' climate change by altering the way it is constructed. He argues that the dominant theme of the current discourse around climate change is one of fear, and compares it to two earlier European discourses of fear associated with climate. Hulme (2008:7-8) first describes how medieval Europeans interpreted extreme weather events as signifiers of divine blessing or judgment. The lack of explanation for experiences of weather that lay outside normal expectation created a sense of anxiety and foreboding which was only 'conquered' in the late eighteenth century through the adoption of naturalistic explanations of weather phenomenon. Next Hulme explores what he calls the discourse of 'climate as pathology' which also emerged through a fear of unknown climates (although in this case as a consequence of travel to different places as opposed to extreme weather events). Danger surrounded the Victorian conception of tropical climates, and the encounter with the previously unknown climates of Africa, south Asia and South America by white settlers invoked fears and anxieties about climate that emerged from the imperial ideology of the time. As new ways of understandings of race, physiology and morality gained ground, the psychological hold on the European mind of the pathology of tropical climates was dissipated. Climate was again conquered

although here in literal senses as well as metaphorical ones, as improvements in tropical medicine and air-conditioning technologies removed some of the direct fears which tropical climates presented to Europeans (Hulme 2008:9-10).

Hulme then goes on to argue that contemporary fears about climate change will be similarly ‘dissolved’ through changes in culture. He characterises what he describes as “conventional attempts at conquering the climatic future” as utopian, brash, and likely to “yield but minor success”. Arguing that instead, fears about climate change will “in the end be dissipated, re-configured or transformed as a function of cultural change” (Hulme 2008:11-14). Hulme does not seem to notice the fundamental difference between the two historical discourses he describes and contemporary concerns about climate change. The former were both based on lack of knowledge and understanding, and fear of the *unknown*. In direct contrast, fears about climate change are based on an increasingly detailed knowledge and understanding, and it is what is now *known* about the impact of anthropogenic greenhouse gases on the climate that has given rise to fears about climate change. However, Hulme completely disregards the overwhelming scientific evidence of the seriousness of impacts associated with climate change<sup>26</sup>. He also ignores the scientific consensus of the IPCC in his broad and unsupported statements about the limited scope of mitigation strategies to ameliorate climate change, which further undermine calls for action to address climate change.

Rosa and Dietz (1998:440) discuss the tendency for strong social constructionists to “challenge the social authority of scientific knowledge by emphasising the uncertainties that underpin scientific claims about climate change, and... pointing to the limitations of the dominant scientific narrative and discourse”. Rosa and Dietz (1998:445) argue that for some constructionists the general circulation models (GCMs) are “so fraught with uncertainty, the data upon which they rely are so limited and missing key variables are so crucial that conclusions about climate change are judged highly problematic”. Clearly it is important that uncertainties are clarified and addressed, and climate change models subject to thorough scrutiny. However, while social constructionism can be of value in identifying unsubstantiated assumptions underpinning scientific claims, and characterising the nature

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<sup>26</sup> To some extent Hulme is doing within a social science context what some geologists (e.g. Plimer 2009) do within the context of physical science: using such a long time frame so as to appear to render a contemporary phenomenon be it climate change or concerns about climate, insignificant in relation to historical trends.

of scientific discourses, social constructionists are ill-equipped to critique the *scientific* validity of climate change science claims.

Demeritt (2001) presents perhaps an archetype of this kind of analysis. His lengthy paper seeks to describe the scientific construction of climate change, and “unmask the tacit social and epistemic commitments” implied by climate modelling. In the same volume of the *Annals of the Association of American Geographers*, Schneider (2001) offers “A constructive deconstruction of deconstructionists – a response to Demeritt”, in which he identifies fundamental flaws in Demeritt’s work, and social constructionist studies like it. The first of these is the extensive use of impenetrable jargon. Indeed, some passages are so baffling they defy comprehension even after re-reading multiple times (Schneider 2001:340).

Schneider (2001:341-2) also asserts that Demeritt’s arguments “lose credibility by being packaged with too many assertions at variance with most scientists’ experience”, and by his failure to support his assertions with empirical evidence of any kind. It is in this context that Cass and Pettenger (2007:236) call for “constructionists of all persuasions to... aim to produce scholarship that carefully uses and evaluates evidence”. Finally, Schneider (2001:432-3) criticises Demeritt for setting up unnecessary ‘straw men’, overstating, and mischaracterising the behaviour of most scientists. Of particular concern, is the extent to which these sorts of sources undermine both scientific consensus and public concern about climate change, in so doing dovetailing with the arguments of climate change sceptics which will be discussed in detail in Chapter 8.

Another way in which strong social constructionists reinforce climate change scepticism is through characterising discourses concerned about climate change as ‘alarmist’. For example, Hulme (4 November 2006) alleges that the carefully hedged statements of climate scientists are being replaced by fearmongering and alarmist language by environmental organisations advocating action on the issue. Hulme disparages these groups for using the terms ‘catastrophic’, ‘chaotic’, ‘irreversible’, ‘rapid’, ‘urgent’, and ‘worse than we thought’ to describe climate change. He argues that “this is not the language of science” and that to “state that climate change will be ‘catastrophic’ hides a cascade of value-laden assumptions which do not emerge from empirical or theoretical science”. Risbey (2008) systematically examines each of these terms, reviewing the

evidence to assess whether they are reasonable descriptors of the key climate change issues and whether the conventional understandings of these terms are broadly consistent or inconsistent with the science (Risbey 2008:27).

Risbey (2008:31) concludes that the terms that Hulme (4 November 2006) and others dismiss as alarmist all seem to be fairly consistent and reasonable descriptors of the phenomenon of climate change and some of its key impacts. He adds that the scientific community itself uses these terms to describe climate change, and argues that if it were not able to use such terms, when describing the impacts of significant phenomena, it “would not be able to communicate accurate information about the degree of threat, the rapidity and imminence of the threat, on whether and when the threat can be ameliorated, or on changes in our understating of the threat” (Risbey 2008:32).

Risbey also observes an asymmetry in the use of the charge of ‘value-loading’, noting that one rarely sees complaints about scientists being value-loaded for describing impacts as ‘mild’. “There must be an element of judgement in deciding precisely which term to use, but that does not render the use of such terms as ‘unscientific’. If it does, then for consistency, terms describing moderate impacts must also be rendered ‘unscientific’, and there is no scope for communication” (Risbey 2008:32). “Shooting the messengers is not going to solve the problem. We need to develop as good a sense of the threat as we can get in the limited time available and choose discourses that set an appropriate course” (Risbey 2008:35).

## **CONCLUSION**

This chapter has sought to review firstly the literature exploring discursive approaches to environmental studies, and secondly the literature exploring the social construction of climate change. The theoretical framework adopted by this thesis is weak social constructionism, which is based on the premise that the way we perceive components of reality depend on discourses that construct them in different ways. Bodies of written, spoken and visual texts and the context within which they are produced, disseminated and received provide clues to the nature of discourses and thus form the object of analysis.

It is argued that this approach offers valuable insight into the nature of complex and often contested environmental issues, conceptualising this contest in terms of environmental

discourses. Environmental discourses play a crucial role, not only in framing the kind of problems to be dealt with, but also constituting the range of possible options and shaping decisions and actions taken to address them. Although this approach is subject to a number of criticisms, awareness of these can help avoid potential pitfalls, and many authors have demonstrated the usefulness of such an approach to the study of environmental issues and, more specifically, climate change.

Because climate change cannot be directly experienced or understood, people's responses to climate change are mediated by the information available to them and the many different ways in which the issue is constructed. As a consequence, competing discourses play an important role in shaping both public opinion and political responses to climate change. Discursive approaches can reveal constructions underpinning responses to climate change and contribute to challenging dominant discourses, illuminating marginalised discourses and developing new discourses.

A wide range of studies reveal the diversity of historical and contemporary climate change discourses. These discourses have both prompted action and been used to justify inaction in relation to climate change. Actors have deliberately and inadvertently used them to promote their interests and agendas. Scientific discourses about climate change play a key role in conditioning public views and political responses. Non-government organisations have also made an important contribution in bringing the issue of climate change to prominence, forming and informing new discourses. At the same time, political discourses around climate change have become increasingly dominant. The media play a crucial role in communicating these different discourses and constructions. Many studies investigate climate change discourses in the UK and the US media, with fewer investigating climate change discourses in the media elsewhere. Very few studies were found that focus on constructions of climate change within the Australian context, and the next chapter will turn to the broader literature to characterise the climate change debate in Australia.

## Chapter 4: The Climate Change Debate in Australia

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### INTRODUCTION

The aim of this chapter is to review the literature exploring the climate change debate in Australia. Many authors describe and discuss responses to climate change in Australia. Most examine Australia's domestic climate change policy (e.g. Bulkeley 2001b; Hunt 2004; Schlapfer 2009), Australia's participation in international climate change agreements (e.g. Jones 2002; McDonald 2005; Stevenson 2009), or both (e.g. Christoff 2005; Hamilton 2007; Pearse 2007). Others consider climate change responses at a local level (e.g. Hislop *et al.* 2000; Bond 2010), public understanding and views about climate change (e.g. Bulkeley 2000a; Carson *et al.* 2010; Pietsch and McAllister 2010), and the role and influence of NGOs in the climate change debate (e.g. Hall and Taplin 2007; 2008).

This chapter will draw upon this literature in characterising the development of the climate change debate in Australia between 1987 and 2007. Three main phases can be identified during this period: the emergence of the issue into the public arena, accompanied by ambitious early political commitments; the increased dominance of discourses opposed to addressing climate change, and retreat from political action; and more recently a resurgence of public concern and political engagement. Sections 4.1, 4.2 and 4.3 will examine each of these phases in turn, considering key events, processes and policies. Particular attention is paid to Australia's domestic response at the national level and participation in the international arena.

There is widespread consensus that Australia's response to climate change has been inadequate. Far from succeeding in reducing Australia's greenhouse gas emissions, Australia's climate change policies have seen emissions continue to grow rapidly, and Australia's per capita emissions are currently the among highest in the world (Diesendorf 2007:3; Hamilton 2007:36-8; Garnaut 2008:153). Given the seriousness of the impacts associated with climate change as outlined in Chapter 2, it is of paramount importance to consider why Australia's response to the issue has been so inadequate, a task to which this thesis seeks to contribute.

## **4.1 THE EMERGENCE OF CLIMATE CHANGE INTO THE PUBLIC ARENA**

There has been scientific interest in climate change in Australia since the early 1970s. The Commonwealth Scientific and Industry Research Organisation (CSIRO) was actively involved with international research efforts in the lead-up to the Villach conference in 1985, and also played a crucial role in translating the outcomes of Villach into policy development in Australia. In the late 1980s, the CSIRO organised two major climate change conferences. The first, Greenhouse '87, was an attempt to engage the interest of the scientific community, assess the likely impacts of climate change, and attract political and public attention. The conference received substantial media coverage and the conference proceedings became a source of information about climate change for the community. The second event, Greenhouse '88, created a public forum for the discussion of issues relating to climate change, and organisers estimated that about eight thousand people participated. Both events made a lasting impression on policy makers and contributed to unprecedented public interest in the issue (Beder 1999:1; Bulkeley 2000d:37).

### **4.1.1 A Green Conjuncture**

In the late 1980s and early 1990s, a conjuncture of positive mutually reinforcing factors translated into a brief period of environmental institutional innovation in Australia, including a strong international stance on climate change. These factors included a highly visible environmental movement, strong public concern about environmental issues, the federal Labor Government's electoral vulnerability and its political sensitivity to environmental issues, economic stability, and emerging international environmental regimes (Christoff 1998:117). Christoff (2005:39) argues that "like many other industrialised countries during the mid to late 1980s, Australia's initial response to the problem of climate change was shaped by an altruistic public discourse focused on global responsibility". The Labor Government led by Prime Minister Bob Hawke, was not only an advocate of international cooperation, but a leader in international attempts to address climate change. It accepted the exclusion of developing countries from binding emissions targets, and recognised Australia's obligation to act on climate change despite growing domestic concerns about the cost of emissions reductions (McDonald 2005:221-2).

In April 1989 the Australian Government initiated a special greenhouse research program to further strengthen the core modelling capabilities of the CSIRO and the Bureau of Meteorology (BOM), and established a National Greenhouse Advisory Panel involving both CSIRO and BOM experts to advise on priorities for further research (BOM 2003:16). On 11 October 1990, the Australian Government adopted the Interim Planning Target (IPT) which aimed to reduce emissions of greenhouse gases not covered by the Montreal Protocol to 1988 levels by 2000, and to cut emissions by a further 20 per cent by 2005 (Bulkeley 2000c:293). The New South Wales, Victorian and Western Australian state governments also adopted similar targets for planning purposes (Hamilton 2001:32). At the Second World Climate Conference in Geneva in October - November 1990, Australia's emission reduction target was one of the most stringent of the 137 nations represented, putting Australia in the position of a leader on the issue of climate change in the international arena (Taplin 1995:17). This position was consolidated in 1992 when Australia sought the inclusion of binding targets in the United Nations Framework Convention on Climate Change (UNFCCC) and was one of the first countries to ratify the convention (McDonald 2005:223).

#### **4.1.2 Early Domestic Policy Development**

During 1990, the government asked the ecologically sustainable development (ESD) working groups<sup>27</sup> to form a 'Greenhouse working group' to assess cost-effective options for meeting the IPT. The group met through the remainder of 1990 and 1991, and released its report in late 1991, including the finding that: "there are a large range of actions which would be cost-effective on energy grounds alone, so the additional benefits in greenhouse gas reduction would be free" (Wilkenfeld, Hamilton and Saddler 1995:9). The group made a number of recommendations and called for the government to draw up timetables and clearly defined responsibilities for acting to reduce greenhouse gas emissions, emphasising the prospects for action through existing institutional and social structures (Bulkeley 2000d:41).

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<sup>27</sup> In 1990 the Australian Government established nine working groups to consider the implications of ecologically sustainable development for nine industry sectors. Following the release of their reports, the Intergovernmental ESD Steering Committee was formed to consider the more than 500 recommendations made. The *National Strategy for Ecologically Sustainable Development* was then published in December 1992 (Bulkeley 2000d:40-2; Aplin 2002:145-7).

Diesendorf (2000:80) argues that if the ESD recommendations had been implemented promptly, they could have met the IPT while simultaneously saving money. However, very few of the recommendations were actually implemented. Working group members were also excluded from the process of drafting the National Greenhouse Response Strategy (NGRS) which was to be the centrepiece of Australia's response to climate change and the means by which Australia planned to meet its international obligations<sup>28</sup> (McDonald 2005:222). Instead, the ESD recommendations were handed over to 37 interdepartmental committees of state and federal officials. At this time the resource industries commenced a strong media and lobbying campaign to oppose action on climate change. The resulting draft NGRS bore few similarities to the conclusions of the ESD working group, with many of the recommendations weakened or discarded (Taplin 1994:146; Bulkeley 2000d:42; Diesendorf 2000:81; Bulkeley 2001b:160).

During 1991 the Industry Commission was also asked to comment on the costs and benefits of stabilising greenhouse gas emissions for Australian industry. This process took the form of an inquiry with public hearings and submissions from interested parties (Taplin 1994:145). The Industry Commission's report emphasised the uncertainties in climate change science and used this as an argument for Australia not to act to address climate change (Hodgson and Barns 1998:148). The Commission also argued that, as other nations were unlikely to act co-operatively, unilateral action by Australia was not in the national interest (Taplin 1994:145). The Commission estimated that achieving the IPT would reduce national output by 1.5%. It concluded that most sectors of the economy would be adversely affected by emissions reductions and that the burden of costs and adjustments in particular industries and regions would be significant (Lowe 1994:320-1). Conversely, the Commission was unable to calculate the costs of inaction, and also conceded that they had been unable to quantify the economic benefits of taking action. Despite these limitations, its report had a far-reaching influence on Australia's response to climate change, and significantly contributed to the development of the NGRS (Bulkeley 2001b:160).

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<sup>28</sup> See Taplin (1994:144-7) and Bulkeley (2000c:40-3; 2001b:159-61) for more detail on the formulation of the NGRS.

### *The National Greenhouse Response Strategy (NGRS)*

The final NGRS was ratified by the Council of Australian Governments (COAG) in December 1992. It concentrated on the implementation of ‘no-regrets measures’; that is, measures to reduce greenhouse gas emissions that also have economic benefits, or at least have no economic costs (Bulkeley 2001b:156-60). Thus the NGRS was largely reliant on voluntary action on the part of corporations to reduce emissions “wherever economically efficient” (McDonald 2005:222). Specific measures included:

- Improving information;
- Reducing barriers to energy efficiency;
- Energy-efficiency labelling of appliances;
- Investment in renewable energy technology; and
- Decisions concerning land use and transport (Bulkeley 2001a:440).

There were, however, some significant caveats attached to the NGRS. In particular, COAG endorsed the IPT “subject to Australia not implementing response measures that would have net adverse economic impacts nationally or on Australia’s trade competitiveness, in the absence of similar action by major greenhouse producing countries” (Commonwealth of Australia 1992:30).

Although many agreed that the NGRS contained some useful measures, the implementation of the strategy proved problematic, and criticism of the NGRS was widespread (e.g. Lowe 1994; Taplin 1994; Wilkenfeld *et al.* 1995; NGAP 1996). Actions taken in energy and resource sectors appeared to run counter to the NGRS both in principle and practice, despite focus on these sectors (Wilkenfeld *et al.* 1995). Taplin (1995:18) argues that far from reconciling environment and development objectives, the end-result of the NGRS was to maintain the status quo. Wilkenfeld *et al.* (1995:4) suggest that “there is no evidence that the NGRS saved one single tonne of greenhouse gas emissions which would not have been saved in any case for other reasons”. In other words, despite ambitious intentions there was no departure from ‘business as usual’.

## **4.2 THE RISE OF SCEPTICISM AND RETREAT FROM POLITICAL ACTION**

Many authors discuss the Australian Government's retreat from action on the issue of climate change from around 1993 until 2006 (e.g. Bulkeley 2000d:33; Diesendorf 2000:90; Papadakis 2002:267; Chaturvedi and Doyle 2010:103). As discussed above, Australia was one of the most progressive advocates of the UNFCCC in 1992 (Taplin 1994:17). Yet merely five years later, Australia distinguished itself as a 'laggard' at Kyoto, by refusing to accept binding targets and pushing for a mandate to increase emissions. Christoff (1998:113) describes this marked change as "Australia's slide from good global citizen to renegade state on the issue of global warming".

### **4.2.1 From Leader to Laggard**

By the end of 1992 the green conjuncture of the late 1980s had effectively evaporated (Christoff 1998:117). Environmental organisations' access to and influence over government diminished greatly. Their exclusion from meaningful engagement in policy formation increased when Paul Keating became Prime Minister late in 1991 (Christoff 1998:118; Hodgson and Barns 1998:146; Chaturvedi and Doyle 2010:103). McDonald (2005:222) argues that Keating's replacement of Hawke as Prime Minister contributed to a significant shift in the climate change debate due to Keating's lack of interest in environmental concerns relative to his predecessor. Australia retreated from its leadership position on climate change, with Keating telling environmental groups that they should be contented with their achievements in areas such as forestry rather than continually lobbying on the amorphous issue of climate change (Taplin 1994:152). Christoff characterises Labor's climate change policy as:

A mixture of rhetorical pronouncement, to satisfy public opinion and minimal action, to placate industry, at a time when the early stages of the UNFCCC's development placed few demands on national governments for concerted policy implementation (Christoff 1998:118).

The opinion-forming and policy-guiding influence of local and international bodies such as the CSIRO and the IPCC waned. Political and economic considerations gained priority in climate change negotiations, as rising unemployment and the 1990 recession displaced environmental issues as a focus for public concern (McDonald 2005:230).

By 1994 it was clear, and even widely admitted by the federal and state governments, that the IPT would not be met and that Australia would not be able to meet its international commitments (Christoff 1998:120). The Australian Government adopted a more cautious attitude in the international negotiation process, taking the position that any further commitment under UNFCCC should be minimal (Bulkeley 2000d:48). In contrast to its pro-active stance at Rio, Australia displayed unwillingness to accept legally binding targets and timetables during the first Conference of the Parties in Berlin (McDonald 2005:223). Australia also advocated the merits of a ‘differentiated’ approach to ensure that each nation-state would bear commensurate losses of economic welfare in pursuing greenhouse gas emission reduction goals (Bulkeley 2000d:33). As discussed in Chapter 2, Australia joined the United States in arguing that developing countries must be included in emission reduction targets because of their growing contribution to the problem, concerns about international competitiveness and environmental effectiveness (McDonald 2005:223). This stance was seen by some as an attempt by the United States and Australia to shift the blame from themselves for the slow process of negotiations (Hodgson and Barns 1998:143; Bulkeley 2001a:435).

Australia’s emissions continued to grow and a public discussion began about the need for more substantial emissions reductions and more stringent measures including a carbon tax. Christoff (2005:39) discusses how debate around such a tax was “captured by a tightly focused policy advocacy coalition representing a range of fossil fuel and energy intensive industries”. He suggests that the members of this coalition – in the energy, mining and transport sectors, and in government economic and energy departments – had been caught off guard and had therefore been slow to react during the first period of altruistic enthusiasm. “Now they dominated the media and policy circles and overwhelmed attempts to establish the carbon tax, using modelling purporting massive negative economic impacts” (Christoff 2005:39).

Upon its election in 1996, the Coalition Government led by John Howard almost immediately reduced funding for energy efficiency programs and scientific analyses. Howard argued that Australia’s support for the UNFCCC constituted an abdication of national interests, arguing that “we should never have got aboard this particular truck at the Rio Conference” (Howard in McDonald 2005:224). The government maintained the ‘no regrets’ approach, adopted by the Keating Government, consistently prioritising economic

over environmental concerns, and national sovereignty over environmental norms in international negotiations and in domestic policy development and implementation (McDonald 2005:224-5).

### *The Greenhouse Challenge Program (GCP)*

The Coalition Government's first climate change initiative was the Greenhouse Challenge Program (GCP), which sought to encourage companies and industry associations to sign up for voluntary reductions in greenhouse gas emissions<sup>29</sup> (Commonwealth of Australia 2005a). Under the program, companies prepared emissions inventories and worked with a liaison officer from the Greenhouse Challenge Office to form an action plan to take "all economic actions" to reduce emissions. Companies then conducted monitoring to verify their performance which could also be subject to random independent auditing (Parker 1999:65). Nearly 800 companies signed up to voluntary agreements, with participants from the oil and gas extraction, mining, electricity generation and manufacturing sectors (Hamilton 2000:68; Commonwealth of Australia 2005b:4-5). Parker (1999:67) attributes the successes of the GCP to its support from a network of industry associations, the fact that improving energy efficiency fits in well with pre-existing business goals, and the way that the program gave GCP staff and internal environmental managers access to business decision-making.

However, although many signatories to the program were committed to reducing greenhouse gas emissions, these gains were offset by the growth of emissions-intensive activities (Bulkeley 2001b:162). There were also no sanctions for failing to implement agreed action plans, and participants could withdraw from the program at any stage without penalty (Parker 1999:66). It was therefore easy for companies to implement trivial environmental projects that generated good public relations but did not achieve the significant benefits that they claimed, or deflected attention from much more serious environmental damage caused by other parts of company operations (Parker 1999:71). The details of the agreements were treated as commercial-in-confidence so it was not possible

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<sup>29</sup> A revised version of this program entitled *Greenhouse Challenge Plus* was launched on 10 March 2005 and around 7000 organisations participated before the program ceased on 1 July 2009 (Commonwealth of Australia 2009a).

for the public to assess the reality of claimed emissions reductions (Hamilton 2000:68). In calculating the emissions reductions due to the GCP, it was assumed that companies would otherwise have made no improvements in energy efficiency. As a consequence, reductions claimed to be due to the program were exaggerated (Hamilton 2000:68).

At the international level, the Australian Government's commitment to addressing climate change was seriously called into question at the second Conference of the Parties to the UNFCCC in Geneva in 1996. Australia dissented with the prevailing scientific consensus of the IPCC, in adopting the stance that there was not a serious problem (Hodgson and Barns 1998:147; Bulkeley 2001a:436). Australia's opposition to binding greenhouse gas reduction targets became more entrenched with Australia opposing the paragraph of the Ministerial Declaration dealing with binding targets, despite the consensus reached on this point by most parties, including the United States, the European Union and Japan (Yu and Taplin 2000:114).

Environmental groups, scientists and sub-national governments argued that Australia should shoulder its responsibilities squarely in the international arena, stressing the potential consequences for Australia should climate change continue unchecked (Bulkeley 2001a:436). Australia was also criticised by many other nations, including its neighbours in the South Pacific (Hodgson and Barns 1998:143). However, Australia again raised the issue of differentiation among developed countries and Australian Government representatives actively lobbied various governments to support Australia's efforts to put differential targets on the agenda at the next Conference of the Parties (Yu and Taplin 2000:115). The Australian Government emphasised Australia's economic vulnerability and small overall contribution to global emissions, repeatedly stating that it "would not sell out the national interest" to take on undue responsibilities (Hamilton 2000:54).

#### *Dubious ABARE modelling and the growing influence of industry*

In justifying its position the government pointed to economic modelling conducted by the Australian Bureau of Agriculture and Resource Economics (ABARE). It suggested that, in complying with a uniform target for emissions reductions, Australia would suffer significant job losses, and a slight reduction in the growth of GDP over several decades, equating to \$9000 per person less than 'business as usual' (Hamilton 2000:54). These

figures and the methods used to derive them were widely contested (Bulkeley 2001b:163). In August 1997, 131 Australian economists signed a joint statement arguing that “the economic modelling studies on which the government is relying to assess the impacts of reducing Australia’s greenhouse gas emissions overestimate the costs and underestimate the benefits of reducing emissions” (Gilchrist 30 August 1997). A range of international sources also described the findings as a gross over-estimation of the cost of greenhouse gas abatement (McDonald 2005:225-6).

Diesendorf (2000:84) highlights how assumptions underpinning the modelling had the effect of making emissions reductions unnecessarily expensive by: excluding the cheapest technologies (energy efficiency and natural gas for electricity generation); ignoring the economic benefits of emissions reductions; and considering the indiscriminate application of a carbon tax as the only possible means to achieve emissions reductions, and assuming only one use for carbon tax revenue (returning it to the economy in a lump sum) (Diesendorf 2000:85-9). The modelling was largely funded by members of a steering committee, with each member paying \$50 000 for the opportunity to “have an influence on the direction of the model development” (as stated in ABARE’s literature). All the non-government members of the committee were very large greenhouse gas emitters, and included Mobil, Exxon, Texaco, BHP, Rio Tinto, The Australian Aluminium Council, and the Business Council of Australia (Hamilton 2000:56-7). The Australian Conservation Foundation submitted the modelling activities of ABARE to the Commonwealth Ombudsman, who found them to be open to allegations of undue influence by industry (Commonwealth of Australia 1998b in Bulkeley 2001b:163).

Beder (1999) also draws attention to the increasingly active role played by the fossil fuel industries in the climate change debate during the 1990s. She discusses how large corporations in Australia and elsewhere funded conservative think-tanks<sup>30</sup>, hired public relations firms and funded scientists and economists sceptical about the seriousness of climate change to lobby the government and confuse the public about the issue:

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<sup>30</sup> For example, the Australian Institute of Public Affairs (IPA), which gets almost one third of its budget from mining and manufacturing companies, regularly produces articles and media statements challenging the scientific consensus about climate change (Beder 1999).

Corporate-funded campaigns try to cast doubt on the validity of global warming predictions... and discredit proponents of initiatives to reduce greenhouse gas emissions. Corporations are also forming front groups and coalitions to lend legitimacy to their otherwise dubious campaigns and influence the policy making process in their favour (Beder 1999:119).

Beder (1999:121) suggests that a measure of the success of this campaign is the fact the Australian Government came to represent fossil fuel industry interests as synonymous with the national interest. Pearse details the influence of the fossil fuel industry's self-titled "greenhouse mafia" on climate policy arguing that:

Through their connections or presence on company boards, in neoliberal think-tanks, and through hired-gun consultants favoured by the Liberal Party, Australia's biggest polluters enjoyed unparalleled access to the prime minister's office and succeeded in having their greenhouse policy agenda adopted almost in its entirety (Pearse 2007:20).

Climate change sceptics became increasingly vocal and influential through the 1990s, continuously challenging the scientific basis of climate change (Hamilton 2001:137-139; Pittock 2005:77-85). They argued that the scientific evidence is not sufficient to conclude that human induced global warming exists, or, if it does, it will not be as bad as the prevailing scientific evidence suggests. This scepticism was echoed in the highest levels of government. At the South Pacific Forum in the Cook Islands in 1997, Prime Minister Howard described the concerns of five small island states regarding greenhouse-gas emissions as "extremely exaggerated" and "apocalyptic". He went on to say:

There is quite a bit of debate about the scientific evidence on the effects of greenhouse gas. It's not all one way. It's not all... the apocalyptic view of the world and of life (Howard in Hodgson and Barns 1998:151).

Hodgson and Barns (1998:148) discuss the use of opposing 'expert' opinions to effectively neutralise the dominant consensus, a practice prevalent in the popular media (e.g. Brunton 4 April 2003; Pearson 10 June 2006). They note Nelkin's assertion that sceptics do not need to muster equal evidence, as it is enough to raise questions that undermine the authority of expert opinion (Nelkin 1975:36 in Hodgson and Barns 1998:148).

## *Safeguarding the Future*

Christoff (2005:40) argues that even in 1997, it was clear that the government's climate change policy was out of step with public opinion, and a significant proportion of the business sector. In August, a survey conducted by KPMG and the Australian Institute of Company Directors found that 69% of 2 200 company directors supported global reduction targets for Australia, with 70% of those favouring a legally binding agreement. A Herald/AC Nielsen-McNair poll in November found that 90% of those surveyed were either concerned or very concerned about the effects of climate change for Australia. Seventy per cent believed that Australia should join other developed countries in signing a treaty to cut greenhouse gas emissions and 68% agreed that "the government's concern that a treaty will cause to Australia to suffer economically should not stop it signing" (Christoff 2005:40).

To deflect growing criticism Howard issued a statement in November 1997 entitled *Safeguarding the Future: Australia's Response to Climate Change*. Citing the government's obligation to reduce greenhouse gas emissions for future generations, together with its "obligation to defend and protect Australian interests, Australia jobs and Australian industry", the Prime Minister launched a five year, \$180 million package of measures (Howard 1997). The package's objective was to significantly reduce Australia's greenhouse gas emissions below projected 'business as usual' levels and target the energy sector as a continuing, major contributor to national greenhouse gas emissions. It included plans for the distribution of new funds, the creation of new laws and the encouragement and co-ordination of new incentives, including<sup>31</sup>:

- Funding to expand the Cities for Climate Protection Program, extend the Greenhouse Challenge Program to smaller companies, and establish an Industry Efficiency Benchmarking and Best Practice Program;
- Mandatory fuel efficiency labelling within the automotive industry, and a goal of improving vehicle fuel efficiency by fifteen percent by 2010;

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<sup>31</sup> The *Safeguarding the Future* package comprised 24 specific measures, listed here are those that received more than \$10 million funding respectively.

- A Mandatory Renewable Energy Target (MRET) requiring that electricity generating companies source an additional two percent of their power from renewable energy;
- The creation of a Renewable Energy Innovation Investment Fund, and the establishment of Renewable Energy Technology Commercialisation Loans and Grants to promote strategically important renewable energy initiatives;
- The formulation of codes and standards, related to voluntary energy efficiency ratings for housing and commercial buildings, appliances and equipment; and
- Funding to establish a national carbon accounting system for land based sources and sinks (Howard 1997; Bulkeley 2000c:300; Taplin and Yu 2000:103).

Despite these and other measures in the package, the Prime Minister revealed that domestic emissions would increase by 18% beyond 1990 levels by 2010. While some worthwhile initiatives were introduced with the package, overall it was seen by many as a disappointment because the actions in relation to renewables and energy efficiency merely reinstated programs cut by the 1997/98 federal budget. The target of an extra 2% of electricity from renewables compared unfavourably with international standards (e.g. Britain's target of 20% from renewables by 2010). There were no targets for energy efficiency, and no move to halt clearing of native vegetation which accounted for 23% of emissions. Of additional concern was the fact that no climate change research funding was included in the package (Taplin and Yu 2000:104).

#### **4.2.2 Australia and the Kyoto Protocol**

During the lead up to the third Conference of the Parties in Kyoto in 1997, the Australian Government threatened to withdraw from any international agreement that was not in the 'national interest'. It antagonised dependent Pacific Island States, bullying them into accepting its position on differentiation and emission increases, by threatening to cut Australia's significant aid contributions to their economies (Christoff 1998:116; Yu and Taplin 2000:113-114). At Kyoto, Australia attracted notoriety for refusing to accept the need for uniform, legally binding targets and timetables for reducing emissions. This,

Australia argued, would have a crippling effect on the economy, in particularly trade competitiveness, and was therefore unacceptable (Yu and Taplin 2000:116; Hunt 2004:159).

McDonald (2005:217) argues that the Australian Government rejected its obligations to the most vulnerable in different spatial and temporal contexts, and the core ethical principles underpinning international approaches to climate change: the 'polluter pays' and 'ability to pay' principles. Australia is a significant contributor to the problem of climate change, accounting for 1.6% of global emissions as the 14<sup>th</sup> highest emitter globally (Dunn 2002:30; Pittock 2005:256). Of particular note, Australia's per capita emissions are the highest in the OECD and the sixth highest in the world, nearly twice the OECD average and more than four times the world average (Garnaut 2008:153). The Australian Government consistently ignored these considerations however. Instead, it argued that Australia should receive special consideration in international agreements because its energy needs are influenced by high population growth, low population density and a proportionately high economic dependency on energy intensive exports (Papadakis 2002:267). Christoff (1998:123) highlights the weakness of this position, arguing that these factors are driven by immigration policy, urban planning, and energy policy respectively and indeed are the very reasons why Australia needs to effectively address its greenhouse gas emissions. They also mean that there are a lot of opportunities to significantly reduce per capita emissions quickly (McNeil 2009).

The second key argument put forward by the Australian Government, together with the US, was that developing countries should be required to commit to binding emissions reductions because of their growing contribution to the problem<sup>32</sup> (Bulkeley 2001a:435; Wong in Warren and Fitzpatrick 5 December 2007). McDonald (2005:224) points to the significant ambiguity of this position; while the Australian Government evoked distributive justice concerns in pushing for a target less than that of other states, it effectively revoked these concerns in calling for developing states to commit themselves to emissions targets. While high population and economic growth rates were used as reasons why Australia should be allowed to increase emissions, the same factors were used to argue that developing countries should be required to reduce them, despite the disparity in incomes

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<sup>32</sup> The United States Senate voted unanimously that the USA should not accept any Protocol that did not include commitments from the developing countries (Leggett 1998:445).

(Christoff 1998:123). Emphasising the costs of action on climate change for Australia while downplaying the costs for the developed world is ethically inconsistent, and led to the dismissal of Australia's climate policies as immoral by a range of actors at the domestic and international level (Hamilton 2001:89; McDonald 2005:234). However, as the collapse of negotiations would have severely, perhaps terminally, undermined the Convention, the pressure for parties to agree to even a weak Protocol was intense. Christoff (1998:115) argues that Australia exploited these tensions to its own advantage to obtain significant concessions.

Despite these concessions, the Howard Government remained antagonistic towards the Kyoto Protocol throughout its next 10 years in office. Shortly after the government's re-election in November 2001, the Prime Minister announced that Australia would join the USA in not ratifying the Protocol on the basis of the arguments described above. Another reason put forward by the government in justifying its decision was that it considered the Protocol inadequate to address climate change (e.g. Kemp 2003:5 in Hunt 2004:159). While emissions reductions agreed to under the Kyoto Protocol will indeed have a limited effect on the problem of climate change, it was partly lobbying by states such as Australia at Kyoto and subsequent conferences of the parties that created these limitations. McDonald (2005:233) argues that to point to the limited efficacy of Kyoto while simultaneously increasing Australia's emissions over this period was disingenuous at best, and hypocritical at worst.

Christoff (1998:116) describes Australia's performance at Kyoto as "inequitable and environmentally destructive". Hamilton (2001:89-90) also highlights how Australia's behaviour reduced its diplomatic credibility and led to "issue contamination", citing several examples where Australia's position in the international arena was undermined by its stance on climate change. It is suggested that the concessions achieved by the Australian Government at Kyoto were also to Australia's detriment domestically. Christoff (1998:124) argues that the result at Kyoto was a recipe for long-term current account instability, at a time when minimal dependency on fossil fuel imports and a competitive advantage in the production, use and export of sustainable, including renewable energy technologies is desirable (also see Diesendorf 2000:82). Hamilton (2000:77) describes Australia's deal at Kyoto as a "poisoned chalice" both for those seeking a global response to climate change, and for Australia's economic future. Not only did it undermine

investments in greater energy efficiency and renewable alternatives, it also left Australia ill prepared to face tougher targets in the future (Hunt 2004:162; Crowley 2007:136).

### **4.2.3 The National Greenhouse Strategy**

During 1996 - 1997, the federal government undertook a review of the NGRS, and the design of a new strategy (Bulkeley 2000c:295). Community participation was effected through two consultation processes: one for suggestions of measures to be included in the draft strategy released in March 1997, and one after its release. Although neither consultation was considered very successful, the resulting National Greenhouse Strategy (NGS) was published in 1998 (Commonwealth of Australia 1998a; Bulkeley 2001a:441). Like its predecessor, the NGS was a broad strategy aimed at establishing a strategic framework for Australia's response to climate change (Jones 2002:118). As such, it included both ongoing measures and measures announced as part of the Safeguarding the Future package, as well as new initiatives (Commonwealth of Australian 1998:viii). The NGS had three major goals:

- To limit net greenhouse gas emissions, in particular to meet Australia's international commitments;
- To foster knowledge and understanding of greenhouse issues; and
- To lay the foundation for adaptation to climate change (Commonwealth of Australia 1998a:3).

Many of the specific measures contained within the NGS were very similar to those included in the NGRS. Most, such as the provision of information, regulation, incentives and funding, relied heavily on both federal and state governments for their implementation, and to a large extent were not implemented (Bulkeley 2001a:441). The NGS did not include any system to monitor Australian climate policy across sectors, although some programs have been periodically reviewed. According to an independent review, some 70% of the expected reductions were dependent on cooperative agreements with industry that emphasised voluntary, cost-effective, or 'no regrets', activities. There were few regulatory initiatives, and no measures that employ fiscal instruments (Dunn 2002:32). Chaturvedi and Doyle argue that:

By the end of the 1990s, even though Australia was still rhetorically reiterating the imperatives of climate change, including emissions reduction, the Howard government's resolve, for all practical purposes, to avoid any long-term disruption to Australia's fossil fuel-driven development path, was palpable (Chaturvedi and Doyle 2010:104).

During the early 2000s Australia became increasingly isolated within the international community in relation to climate change as its former 'Umbrella Group' partners Japan, Canada, New Zealand, and Russia, ratified the Kyoto Protocol (Papadakis 2002:273). In the face of Australia's obstructionist behaviour at international negotiations, European countries mooted the possibility of trade sanctions through cases brought to the World Trade Organisation (Papadakis 2002:270). The threat of litigation by countries endangered by global warming, such as Pacific Island States also emerged, although these countries are in a weak bargaining position in relation to Australia (Sydee 2004:1). By 2005 Australia and the US were the only developed countries that had not ratified the Kyoto Protocol. Indeed, in light of the government's repeated assertion that it intended to meet its Kyoto target while remaining outside of the terms of the agreement, Hamilton (2001:150) argues that Australia's position derived in part from the government's desire to retain positive relations with its key strategic ally, the United States, who would almost certainly have appreciated Australia's common position on the climate change regime<sup>33</sup> (also see McDonald 2005:229).

### *Securing Australia's Energy Future*

In 2004, the Prime Minister released a white paper on energy and climate change called *Securing Australia's Energy Future*. It included additional funding programs, including the Low Emissions Demonstration Fund (to support commercial demonstration of low carbon energy production technologies), and the Solar Cities Program (to demonstrate the use of solar power and energy efficiency measures in urban locations) (Stephens 2007:14). The white paper promoted relatively new technologies such as a carbon capture and storage (also known as geosequestration) as the main way forward, signalling the government's intention to retain coal as its key energy source and export commodity. Environmental groups and the Australian renewable energy industry were critical of the white paper's

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<sup>33</sup> Later comments by Robert Hill, the then environment minister, also suggested that Australia was trying to help prevent the USA from becoming isolated, as Australia was trying to reach a free trade agreement with the US at this time.

advocacy of conventional energy sources such as coal and oil, to the detriment of both the renewable sector and emissions reductions (Curran 2007:243). This was particularly evident in the government's decision not to increase the MRET, even though the two percent target had already been met more than five years ahead of schedule (Commonwealth of Australia 2004:147; Stephens 2007:15-16).

### **4.3 THE RESURGENCE IN PUBLIC CONCERN & POLITICAL ENGAGEMENT**

The public prominence of climate change increased dramatically during the mid to late 2000s with series of high profile events that propelled the issue into the spotlight. For the first time climate became a mainstream issue (Hamilton 2007:194). It began being reported upon regularly in the mass media. Ministers and shadow ministers discussing climate change became a fixture on TV news programs, with frequent commentaries in the press by journalists, academics, environmentalists, politicians, and business leaders (Carson *et al.* 2010:902). One journalist commented that “stories that had been rejected in the past... were now making it to page one” (Frew 28 October 2006). 2006 and 2007 were particularly eventful in terms of the climate change debate in Australia, and saw a dramatic increase in media coverage with many front-page stories on climate change. Hall and Taplin (2008:367) found that media coverage more than tripled in the last three months of 2006 relative to the same period the previous year

#### **4.3.1 A Second Green Conjunction**

Many suggest that this dramatic increase in concern about climate change in Australia was fuelled, in part, by the severe and lengthy drought experienced between 2000 and 2010 (e.g. Curran 2007:243; Hall and Taplin 2007:333; Pietsch and McAllister 2010:218). Stringent water restrictions were imposed in most major cities. In many places watering domestic gardens and washing cars were banned. Residents were encouraged to take short showers, install water-efficient shower heads and fix leaks. The media carried regular reports about shrinking water supplies. The price of vegetables rose and in some areas rivers stopped flowing (Gascoigne 2008:528). There were particularly devastating impacts on Australia's most important river system, the Murray-Darling Basin (Lawrence 2009:282). The drought and related economic hardship, including water restrictions were increasingly attributed to climate change by Australian scientists, media and the public

(Christoff 2005:40). Many argued that the drought would continue to worsen because of climate change, and drew attention to scientific predictions of reduced rainfall from climate change (Hennessy *et al.* 2008). Whilst the Prime Minister remained at pains to keep the issues of drought, rainfall and climate change separate (Baker 19 February 2007b), widely publicised scientific reports pointed to the long-term economic and social costs of climate change for Australia (Christoff 2005:40).

### *NGO campaigns and grassroots organisations*

While many Australian environmental non-government organisations (NGOs) have campaigned to raise public awareness and promote political action on climate change since the early 1990s, the prominence and influence of these efforts increased significantly in the mid 2000s (Hutton and Connors 1999; Hall and Taplin 2008:359). As part of a global network of NGOs campaigning for action on climate change, Australian NGOs marked the 2006 International Day of Action on Climate Change with mass rallies. The Australian ‘Walk Against Warming’ was supported by Greenpeace Australia Pacific, Friends of the Earth, The Australian Conservation Foundation (ACF), and the Climate Action Network Australia. The aim of the walk was to publically demonstrate community concern about climate change and attracted over 100 000 people around Australia, including around 40 000 in Melbourne and Sydney respectively, a significant increase from the total attendance of around 4 000 at the inaugural walk in 2005 (Hall and Taplin 2007:332).

This period was also characterised by the proliferation of grassroots organisations and local community initiatives around the issue of climate change (Bond 2010:217-9). For example, Rising Tide undertakes grassroots awareness-raising work. In addition to holding regular information and letter-writing stalls on weekends in city areas, Rising Tide held a Solar-Powered Solstice Festival in December 2005. Newcastle residents were encouraged to “turn off the power for an hour” at home and attend an event in the city’s Civic Park powered by large solar cells (Rising Tide 2005 in Hall and Taplin 2007:332). Bond’s research into these community initiatives found that “a plethora of activities and approaches are being undertaken to respond to climate change at the local level”. Many of these groups are very active and already implementing behaviour changes to respond to climate change. These groups can also be a source of information and inspiration for other citizens and groups concerned about climate change (Bond 2010:217-9).

The number of books and films seeking to explain climate change and possible solutions to a general readership increased rapidly (e.g. Flannery 2005; Lowe 2005; Gore 2006; Lovelock 2006; Pearce 2006; Monbiot 2007). Former US Vice President, Al Gore's feature documentary on climate change *An Inconvenient Truth* is identified by some as a "pivotal moment in the debate" (Hamilton 2007:194; Hall and Taplin 2008:366). Released in Australian cinemas in 2006, it explained the science of climate change, discussed predicted impacts in some detail, and criticised the United States' and Australia's failure to ratify the Kyoto Protocol. In September 2006 Al Gore visited Australia and ran a series of workshops in conjunction with the ACF's *Climate Project*, an initiative seeking to raise public awareness and understanding about climate change. Hundreds of members of the public were selected to receive training from Al Gore and the ACF to deliver presentations about climate change within their communities and around Australia (Galliard and Ferreira 2009).

#### *Business calls for action*

NGOs also worked with groups of business leaders in support of action on climate change through such networks as the ACF-facilitated Australian Business Roundtable on Climate Change (Hall and Taplin 2007:324). The Roundtable aimed to "advance the understanding of business risks and opportunities associated with climate change," and its members included several major corporations: BP Australasia, Insurance Australia Group, Origin Energy, Swiss Re, Visy Industries and Westpac (Curran 2007:248). The Roundtable, and sections of Australia's business sector more generally, began to lobby the government to take a more proactive stance on climate change, concerned that Australia would miss out on long-term commercial opportunities (Rosewarne 2007:27; Lawrence 2009:287). In particular, the insurance industry, agricultural and finance sectors, and a range of investor interests, started to realise that in the long term a carbon price was inevitable. From this perspective, certainty for business planning would be increased if the government moved early to establish a carbon price or emissions trading (Rosewarne 2007:56; Stephens 2007:18; Chaturvedi and Doyle 2010:106).

Many business groups argued that without such signals, the incentive to invest in a range of costly alternative technologies remained constrained. For example, the Business Council for Sustainable Energy argued that proven low emission technologies, such as wind power,

biomass, and solar are already available, “but need a carbon price signal to make them viable against cheap coal and encourage their further development” (Trounson 26 October 2006). Commissioning independent research from the CSIRO, the Roundtable requested specific modelling of a 60% reduction of emissions from 2000 levels by 2050. The resulting report, *The Business Case for Early Action*, found that delaying action would result in reduced economic growth, both in the short and long term. It argued that a 60% reduction could be achieved while retaining strong economic growth, and that there would be a net gain in employment growth if early rather than delayed policy action was taken (ABROCC 2006; Curran 2007:248).

### *The Stern Review*

These findings were reinforced by the *Stern Review on the Economics of Climate Change* which was published in October 2006. *The Stern Review* is a comprehensive report on the projected economic impacts of climate change. It was produced for the UK Government by the former chief economist of the World Bank Nicholas Stern. Its key message is that a significant global reduction in greenhouse gas emissions is vital in the short term to avoid dire long-term economic impacts. Stern characterises climate change as the “world’s greatest market failure” and concludes that the costs of failing to reduce greenhouse gases will be far greater than those of timely action:

If we don’t act, the overall costs and risks of climate change will be equivalent to losing at least 5% of global GDP each year, now and forever. If a wider range of risks and impacts is taken into account, the estimates of damage could rise to 20% of GDP or more. In contrast, the costs of action – reducing greenhouse gases to avoid the worst impacts of climate change – can be limited to around 1% of global GDP each year (Stern 2007:xv).

*The Stern Review* caused an international stir, generating an enormous volume of commentary in both the popular press and the academic literature. Jensen and Webster (2007:428) argue that while *The Stern Review* was not without flaws, it raised the quality of the public debate about climate change and put the issue firmly on the policy agenda. It called into serious question the Howard Government’s argument that Australia should not commit to emission reductions because they would damage the economy (Hall and Taplin 2008:366), highlighting both Australia’s status as the second highest per capita emitter, and

its vulnerability as a very dry continent especially susceptible to climate change impacts (Curran 2007:244).

Cumulatively, the factors described above contributed to a significant shift in public opinion in Australia. Early in October 2006 an opinion poll conducted by the Chicago Council on Global Affairs and the Lowy Institute for International Policy, found that 68% of Australians believed climate change was a “critical threat”. Overall, climate change rated higher than national security as an issue of concern (CCGA *et al.* 2006:68).

### **4.3.2 Domestic Policy Developments**

In response to changing public sentiment, the Howard Government’s domestic climate change policy also began to shift (Hall and Taplin 2008:366). Whereas in the past, Howard had openly expressed scepticism about climate change, during this period he sought to reposition himself as a “climate realist” (as opposed to what he called a “climate fanatic”) (Crowley 2007:124; Gascoigne 2008:523). His government’s primary focus was upon exploring ‘clean coal’ and nuclear power as potential solutions to climate change, and he commissioned an inquiry into the options for developing domestic nuclear power (Switkowski *et al.* 2006). However, the government was coming under increasing pressure to develop a domestic emissions trading scheme, both from the states, which declared that they would start their own scheme in the absence of federal action, and from the International Energy Agency (Crowley 2007:135).

In 2003 New South Wales had established a limited emissions trading scheme (the NSW Greenhouse Gas Abatement Scheme), and in 2005 the state and territory governments established the National Emissions Trading Taskforce to investigate the potential for a national scheme. In November 2006, the Prime Minister established a Prime Ministerial Task Group on Emissions Trading. Its terms of reference included the requirement that Australia’s “competitive advantage through the possession of large reserves of fossil fuels and uranium be preserved” in assessing Australia’s further contribution to reducing greenhouse gas emissions (Shergold *et al.* 2007). Nonetheless the taskforce’s report released in February 2007 supported the establishment of a domestic cap and trade scheme (Shergold *et al.* 2007). In June, Howard announced that his government would introduce

an emissions trading scheme by 2012, though he refused to commit to any specific emissions reduction targets (Crowley 2007:135).

Also during this period, the government committed to ensuring that about 15% of Australia's electricity would come from "low-emission" sources by 2020. It also launched a taxpayer-funded advertising campaign entitled *Be Climate Smart*, featuring television commercials and newspaper advertisements that focused on simple things individuals can do to reduce their greenhouse gas emissions, such as drying clothes on a washing line or switching to compact fluorescent light bulbs (Commonwealth of Australia 2007; Pincock 2007:338). In July 2007, the government announced a \$200 million Global Initiative on Forests and Climate, \$336 million Green Vouchers for Schools Program (to fund installation of solar hot water systems and rainwater tanks in schools), and a \$252 million Solar Hot Water Rebate scheme (to provide rebates to households replacing electric hot water systems with solar systems)<sup>34</sup> (Stephens 2007:14).

Although Labor was not in power at the national level, all eight state and territory governments were Labor. In April 2007, the then leader of the opposition, Kevin Rudd, and the Premiers of the six states and Chief Ministers of the two territories initiated a climate change review to build on the work done by the National Emissions Trading Taskforce<sup>35</sup>. Ross Garnaut, an economist at the Australian National University and an advisor to former Labor governments, was chosen to lead the review and make recommendations on climate policy (Carson *et al.* 2010:903). His mandate was to undertake an independent report analogous to *The Stern Review* in the UK, focusing particularly on the economic costs and benefits of climate change for Australia, and measures to address it (Lawrence 2009:288).

### **4.3.3 Australia, the APP, APEC and Beyond**

In the context of growing public pressure, Australia's involvement in the Asia-Pacific Partnership on Clean Development and Climate (APP) was interpreted by many as an attempt to avoid criticism for not participating in international efforts to address climate

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<sup>34</sup> Stephens (2007:15) argues that it is important to note that only a fraction of the \$3.6 million that the Howard Government committed to addressing climate change during its time in office was actually spent.

<sup>35</sup> The federal government joined the Review in January 2008 after the Labor party came to power, with various government ministries (particularly Treasury) involved with the process (Garnaut 2008:xiii).

change (e.g. Cornwell 12 January 2006; Hamilton 2006:6-8). In January 2006 Australia hosted the inaugural meeting of the APP. Adding further weight to Australia's involvement, the Prime Minister addressed the meeting himself. However, the government's priorities were still clearly directed towards promoting fossil fuel use with only 25% of the \$100 million committed by the Australian Government to support clean development projects and capacity building activities through the Partnership, dedicated to renewable projects (Howard 2006). The other key message of John Howard's speech to the APP meeting was that climate change policies must not impinge on economic growth, with Howard declaring that:

The idea that we can address climate change matters successfully at the expense of economic growth, is not only unrealistic but it also unacceptable to the population of Australia which I represent (Howard 2006).

Lawrence (2009:285) argues that the lack of substance in the APP was reflected in its modest funding; the Howard Government only committed \$150 million over 5 years<sup>36</sup>. He argues that the Howard Government's strong advocacy of the APP during this period was linked to coal and energy-intensive industry interests, and was part of the government's strategy to demonstrate some policy movement on climate change while postponing serious action (Lawrence 2009:281-2). Similarly, Chaturvedi and Doyle (2010:105-6) suggest that "the APP gave the appearance of action without constraining Australia's polluters and also provided an alternative to the UN process".

### *The Sydney Declaration*

Howard also made an effort to define the climate change issue when Australia hosted the annual Asia-Pacific Economic Cooperation (APEC) summit in Sydney in September 2007. He dedicated a number of press releases to the issue highlighting the new profile of climate change in Australia (Pincock 2007:338). McGee and Taplin (2009:233) suggest that the government looked to the APEC summit to rebuild its domestic political stocks on climate change by brokering an agreement that could be seen as an alternative to the Kyoto Protocol. Howard went so far as to argue that the APEC Leaders Meeting would be "one of the most important international gatherings of leaders to discuss climate change since the

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<sup>36</sup> This was later reduced to \$100 million by the Rudd Government in 2008 (Commonwealth of Australia 2008).

1992 Rio Conference” (Howard quoted on *Lateline* 3 September 2007). At the meeting, Howard attempted to negotiate an APEC position on a long-term aspirational (i.e. non binding) global emissions reduction goal (McGee and Taplin 2009:222-5).

However, media reporting suggested that developing nations, particularly China, were unhappy about attempts to agree on a global emission reduction goal outside of the UNFCCC process (Callick 1 September 2007). Instead, the meeting produced the *Sydney APEC Leaders Declaration on Climate Change, Energy Security and Clean Development*. It contains a very weak commitment for APEC nations to “work to achieve a common understanding on a long-term aspirational global emission reduction goal to pave the way for an effective post-2012 international arrangement”<sup>37</sup> (APEC 2007). Like the APP, the *Sydney Declaration* shifts the focus of international cooperation on climate change towards voluntary commitments for research, information sharing and development of cleaner technologies. It is also committed to the promotion of clean coal and carbon sequestration through the APEC Energy Working Group (APEC 2007:4).

#### *The 2007 federal election*

Australia’s federal election in November 2007 was arguably one of the first in the world in which climate change featured as a key election issue (Milton 2008; Lawrence 2009; Carson *et al.* 2010:902). Opinion varies as to just how important an issue climate change was. Gascoigne (2008) suggests that climate change was *the* defining issue of the election campaign. Carson *et al.* (2010:902) suggest that the three dominant issues in the election were Work Choices (the Howard Government’s industrial relations policy), climate policy and water policy, with the latter two linked by the severe drought. In contrast, an Australian/Newspoll survey carried out before the election found that the environment was tied with the economy as the fourth most important issue in deciding voting preferences, behind health, education and water planning (Lawrence 2009:287).

Certainly, the then Opposition Leader Kevin Rudd chose climate change as one of a only a few policies through which he would differentiate his party from the government, and both

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<sup>37</sup>The Rudd government reaffirmed Australia’s support for the *Sydney Declaration* at the 2008 APEC Leaders meeting in Peru (McGee and Taplin 2009:233).

Howard and Rudd focused on climate change at key moments in the election campaign (Pincock 2007:338; Christoff 2008:35). In a major speech, Rudd cited climate change as Labor's number one issue. "Australia needs new leadership on climate change. Mr Howard remains in a state of denial" (Rudd in Gascoigne 2008:528). The two leaders went head-to-head in a nationally televised debate on 21 October, five weeks before the election. Gascoigne (2008:524) notes that climate change was mentioned 24 times, close behind the economy which was mentioned 33 times. Howard promised to establish a fund to pay for the development of clean energy, and to compensate low-income earners for increasing power costs, funded by the revenue raised by auctioning emissions permits. For his part, Rudd made a point of reminding voters that his party was committed to ratifying the Kyoto Protocol and had set a concrete target for a 60% reduction in emissions from 2000 levels by 2050, although the Labor party refused to set any short-term targets until after it received the findings of the Garnaut Review which was due in August 2008 (Pincock 2007:338).

#### *Australia at Bali*

COP 13 in Bali in December 2007, opened with applause for the new Australian Government, acknowledging that Kevin Rudd had, just a week earlier, signed the instrument of ratification of the Kyoto Protocol as his first act in government. No less than six Australian ministers and the Prime Minister attended Bali and related events. The presence of an Australian Prime Minister at an international environmental forum was unprecedented, and Rudd was one of only six heads of state in attendance, raising expectations of Australia's participation (Christoff 2008:35). However, Christoff (2008:35) argues that "at Bali it soon became clear that Labor had not thought beyond ratification of the Protocol. Australia was hesitant throughout the conference and at times negative". Specifically, by failing to support the European Union, China and other developing countries, Australia bolstered the United States efforts to oppose clarity about new international targets and exclude the strong text that others wanted in the Bali Action Plan.

Christoff (2008:36) acknowledges that the behavior of the Australian delegation could perhaps be attributed in part to the fact that there had been no time between the federal election and the conference to change the delegation (which included industry representatives and bureaucrats supportive of the previous government's policies) or

amend its brief. He also suggests that given the normal chaos of a change of government it was always likely that attention to policy detail would be slight and caution great about making potentially ill-informed decisions. However it soon became clear that the hesitancy of the Australian delegation was directed by the new government. “At times the delegation showed courage, only to be reined in by its political masters. Its premature announcement that Australia would support the EU/IPCC targets was overturned by Rudd” (Christoff 2008:35-6).

Christoff (2008:36) argues that with climate high on Labor’s pre-election agenda, one would have expected greater foresight about the demands of office, and a high level of preparation for this impending international meeting. He suggests that there was a feeling within the government that Labor had done enough on climate change for the moment – ratifying the Kyoto Protocol, setting an aspirational target for 2050 and commissioning the Garnaut Climate Change Review. Nevertheless, during the final plenary Australia finally supported the IPCC-based target band and, in doing so, helped cement this in the statement made by the Ad Hoc Working Group on Further Commitments for Annex 1 Parties under the Kyoto Protocol (Christoff 2008:36). This marked a new phase in Australia’s participation in the international climate change regime, and the climate change debate in Australia. It remained to be seen to what extent this symbolic shift is matched by substantive change (Lawrence 2009:281).

## **CONCLUSION**

The climate change debate in Australia has passed through a number of phases since the issue first emerged into the public arena in the late 1980s. Australia exhibited early international leadership on climate change, advocating binding emission reduction targets and recognising the need for Australia to act despite the cost it might incur. In 1990 the Hawke Government adopted an ambitious Interim Planning Target for domestic emissions reductions, and in 1992 Australia was one of the first countries to ratify the United Nations Framework on Convention on Climate Change.

However, the National Greenhouse Response Strategy adopted by the Keating Government in December 1992 had significant limitations, and its implementation saw no departure from ‘business as usual’. From 1993 onwards Australia adopted an increasingly

recalcitrant position at international negotiations, arguing that further commitments under the UNFCCC should be minimal. Elected in 1996, the Howard Government questioned the seriousness of climate change and refused to ratify the Kyoto Protocol. Domestically, Australia's climate change programs and policies including The Greenhouse Challenge Program and the National Greenhouse Strategy relied heavily on voluntary participation and 'no regrets measures'. Collectively they failed to reduce the growth in Australia's greenhouse gas emissions which continue to be among the highest per capita in the world.

From 2005 onwards a number of factors contributed to a significant shift in the climate change debate in Australia, including an ongoing drought, the efforts of a wide range of environmental and business groups, and a growing number of books, films and reports about climate change. Heightened public concern about the issue translated into a political shift with the government seeking to position itself as acting on climate change through its participation in the Asia Pacific Partnership on Climate Change and by putting the issue on the agenda when Australia hosted APEC in 2007. Climate change featured as an election issue in the federal election in November 2007, and as its first official act the newly elected Rudd Government ratified the Kyoto Protocol and sent a large delegation to the United Nations climate conference in Bali.

There is widespread agreement within the literature that Australia's response to climate change between 1987 and 2007 failed to effectively address the issue (Lowe 2005:185-191; Hamilton 2007:36-43; Pearse 2007:97-122; Diesendorf 2009:24-8). Indeed, although this thesis does not address more recent developments, many argue that Australia's response to climate change continues to be inadequate. Various studies address why this may be the case from a number of methodological and theoretical perspectives. To date however, there have been very few studies utilising a discursive approach to investigate this pressing issue in the Australian context, a gap in the literature that this thesis seeks to address.

## Chapter 5: Research Methodology

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### INTRODUCTION

Methodology refers to the overarching rationale for the conduct of a research project, encompassing the research design, methods of data collection, and analytic strategy (Hay 2002:63). Methodological choices play a crucial role in shaping both the development and execution of research, which in turn, strongly influence research outcomes. It is therefore important that the methodology used is consistent and clearly explained (Sarantakos 2005:132-3). The purpose of this chapter is to clarify the theoretical framework underpinning this thesis, outline the research strategy adopted, and describe the methods used to investigate the research questions.

Section 5.1 will reiterate the research questions posed in Chapter 1, and seek to situate them in relation to the perspectives from the literature presented in Chapters 2, 3 and 4. The theoretical framework utilised will be clarified and the ontological and epistemological implications of the social constructionist approach taken by this thesis considered. The research strategy adopted and the rationale for choices made in relation to the methods of data collection and analysis will then be described.

Section 5.2 will discuss the methods of data collection employed. A wide variety of texts were collected from a number of different sources in order to gain insight into the different ways climate change is constructed in the Australian context. In particular, a large number of media texts were collected together with a range of government texts, and texts produced by international institutions, environmental organisations, industry associations and other groups.

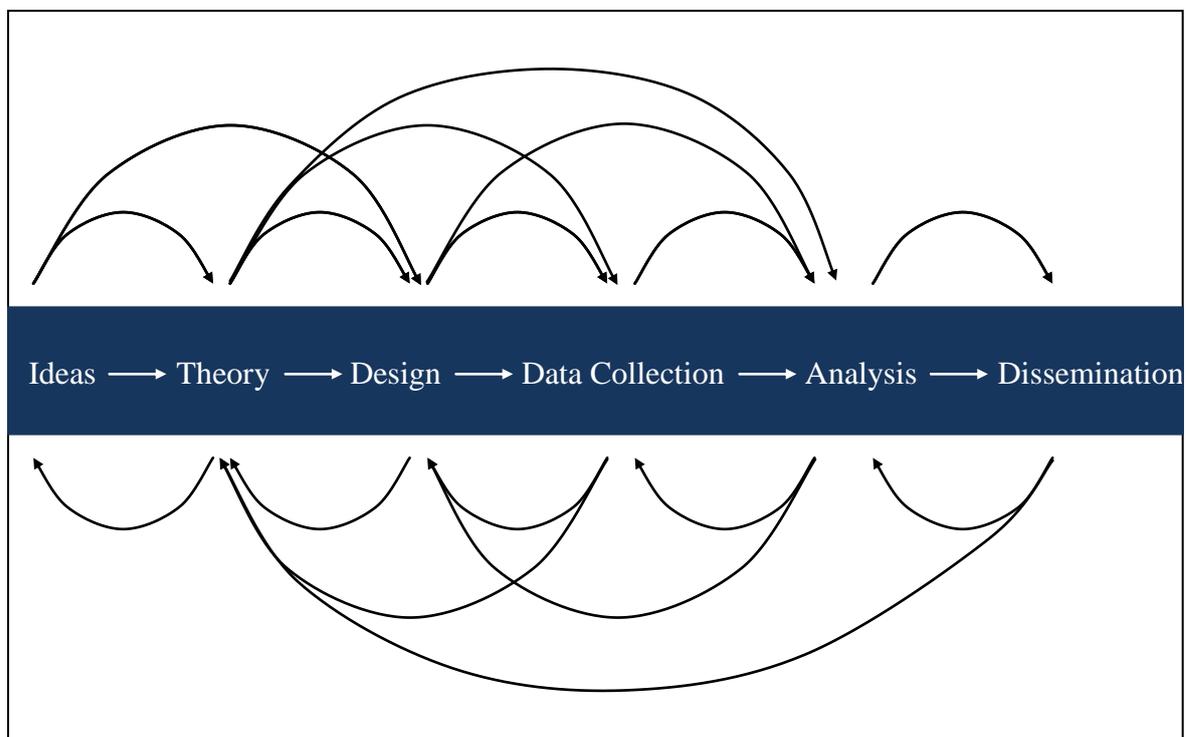
Finally, Section 5.3 will discuss the approach to data analysis that was adopted. Discourse analysis will be introduced and interpretive structuralism and critical discourse analysis, two varieties of discourse analysis considered particularly useful in the context of this thesis, will be described. The specific approach to doing discourse analysis developed and used within this thesis will then be discussed in detail.

## 5.1 RESEARCH DESIGN

Research design is often described as a linear process, which begins with an idea, followed by the gathering of theoretical information and the development of a research plan. Data is then collected and analysed, and finally, the findings reported (e.g. Bouma 2000:7; Sarantakos 2005:105). In reality, research often tends to be less tidy (Bernard 2000:66). Berg (2007:24) proposes a more reflexive approach:

You begin with an idea, gather theoretical information, reconsider and refine your idea, begin to examine possible designs, re-examine and refine theoretical assumptions, and perhaps further refine your original idea. Thus, with every two steps forward, you take a step or two backward before proceeding any further.

What results is far from a linear progression in a single forward direction. Rather, you are spiralling forward, with each new phase informing a reassessment of the last, as illustrated in Figure 5.1 (Sarantakos 2005:113; Berg 2007:24). In this context, the aim and research questions of this thesis changed many times. The theoretical framework employed evolved, the research strategy emerged from the literature review and data collection phases of the project, and the analysis prompted further data collection and a reassessment of methods.



**Figure 5.1 The spiralling research approach.** *Source:* developed from Berg (2007:24).

### 5.1.1 The Research Questions

Research questions direct or drive research. How a research study is conducted depends largely on what the research questions are. It is therefore important to frame or formulate clear research questions (Paltridge 2006; Berg 2007:34). Berg (2007:25) emphasises that within the spiralling approach, research aims and question may continue to shift, change, and take form as research unfolds, a process which occurred during the development of this thesis.

I began this project with little more than a sincere concern about the consequences of climate change, a desire to contribute in some way to shedding light on why Australia's response to climate change has been so inadequate, and a vague idea that a social constructionist approach might have something to offer. Reviewing the literature reinforced all three motivations. As discussed in Chapter 2, climate change has serious environmental, social and economic consequences, and urgent action is required to mitigate greenhouse gas emissions and adapt to climate change that is already occurring as a result of past and present emissions (IPCC 2007a,b,c). Climate change had a much lower public profile when I began this project in 2005, and I became increasingly interested in why such a serious issue was scarcely registering in the political and public domain in Australia.

Reviewing the academic literature about Australia's response to climate change confirmed that it has been seriously inadequate, with Australia's greenhouse gas emissions continuing to rise rapidly (Diesendorf 2000; Bulkeley 2001b; Hunt 2004; Lyster 2004; Christoff 2005; Lowe 2005; Crowley 2007; Stephens 2007; Lowe 2009; Howarth and Foxall 2010). As such, there is a clear need for research investigating factors shaping this response. It also became clear that social constructionism can be a useful theoretical framework, providing a robust basis for research into responses to climate change. Chapter 3 highlighted many scholars who have effectively used discursive approaches to research climate change in different contexts. However, very little research has been done using such approaches in Australia. While many authors have addressed specific climate change policies and the politics of climate change more generally, very few have sought to characterise the discourses emerging from the climate change debate in Australia, or use discursive approaches to investigate responses to climate change in the Australian context.

By the time I began collecting data in 2007, the climate change debate in Australia had shifted significantly. As discussed in Chapter 3, climate change attained the status of a mainstream issue during this period, and was regularly reported upon in the mass media, and raised by scientists, non-government organisations, businesses and politicians. It soon became clear that many different discourses could be identified within the climate change debate in Australia, with competing constructions of both climate change, and possible options for addressing the issue. In this context, the aim of this thesis is to investigate the social construction of climate change in Australia, through addressing three interlinked research questions:

1. What are the key discourses that inform and emanate from the climate change debate in Australia?
2. How do these discourses construct the issue of climate change?
3. How are different options for addressing climate change constructed?

Implicit within both the research aim and research questions is a social constructionist perspective, and social constructionism is the theoretical framework underpinning this thesis.

### **5.1.2 The Theoretical Framework**

Theory can be defined as a system of logical statements or propositions that describe different aspects of some phenomenon, and seek to explain the relationship between two or more objects, concepts, or characteristics. In an applied context, theories can be understood as interrelated ideas about various patterns, concepts, processes, relationships or events. Theory might also represent attempts to develop explanations about reality or ways to classify and organise concepts, describe processes, or predict future events (Babbie 2003; Berg 2007:19).

Theory comprises an important component of the research process, influencing the identification of issues and definition of problems, informing the selection of methods, and guiding the interpretation of results (Frankfort-Nachmias and Nachmias 2008:18). The

development of a rigorous theoretical framework to guide the data collection process is crucial, as theory provides guidance in determining what data to collect, and the strategies appropriate for analysing the data (Yin 2003:28-31). Emel (1991:389) argues that “theories are not truths but tools”. Far from being unrelated to actual issues or problems, theory is necessary to inform an understanding of these problems and highlight necessary components of a workable solution. Proctor (1998:367) suggests that if there is insufficient formulation of what the problem is (as informed by theory) then solutions will ultimately fail.

There are two main types of theory: idiographic theory and nomothetic theory. An idiographic theory accounts for the facts in a single case, while a nomothetic theory may account for the facts in many different cases (Bernard 2000:76). In terms of this thesis, the nomothetic theory of weak social constructionism has been adopted to investigate the processes by which the issue of climate change is constructed within the Australian context, and to explore how these constructions frame and constrain responses to climate change. As discussed in Chapter 3, social constructionism is one of a number of discursive approaches that have been found to be useful in investigating environmental issues, including responses to climate change (Feindt and Oels 2005:165).

Social constructionism is informed by the ontological position<sup>38</sup> that humans construct multiple realities (Sarantakos 2005:37). This position has significant epistemological implications, as illustrated in Figure 5.2. Social constructionism argues that knowledge is socially constructed in different ways, through discourses that often present conflicting constructions. These constructions do not only influence the way particular issues are perceived, but also shape social responses to these issues (Burr 2003:2-5). It is therefore necessary to identify and deconstruct the discourses that arise around responses to climate change, and the methodology and methods adopted need to be able to facilitate this.

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<sup>38</sup> An ontological position refers to a researcher’s view about the nature of reality. An epistemological position refers to their view of what we can know about the world and how we can know it (Marsh and Furlong 2002:18-19).



### **5.1.3 The Research Strategy**

Within the social constructionist theoretical framework described above, a case study research strategy incorporating the collection and analysis of texts was adopted. A case study is an empirical enquiry that investigates a contemporary phenomenon within its real-life context (Yin 2003:13). Case studies focus on one or more instances of a particular phenomenon with a view to providing an in-depth account of events, relationships, and processes occurring in that instance to illuminate the phenomenon more generally (Denscombe 2002:32). Yin (2003:9) argues that case studies are an ideal research strategy when ‘how’ or ‘why’ questions are being posed about contemporary events over which the researcher has little or no control. Research questions 2 and 3 are both ‘how’ questions and the climate change debate in Australia is a contemporary event over which I have no control.

Central to the case study approach, is the selection of one or more ‘cases’ chosen for their typical or unique manifestation of the phenomenon of concern, or for their intrinsic interest and importance. Cases may be individuals, groups, places, organisations, events, decisions, processes, time periods or a combination of these (de Vaus 2001:220; Yin 2004:47). In this thesis the case is the climate change debate in Australia between 1987 and 2007. It comprises a place: Australia, a number of key individuals and organisations involved in the climate change debate, and a time period: 1987-2007. Yin (2004:113) also highlights the usefulness of engaging in more than one level of analysis, through identifying and investigating “subunits” embedded within the overall case. In this instance the year 2007 was selected as the primary point of focus.

Conducting a case study involves systematically gathering enough information about the case to effectively understand it. The main advantage of this strategy is that it allows researchers to retain “the holistic and meaningful characteristics of real-life events” (Yin 2003:1-2), facilitating the collection of “extremely rich, detailed, and in-depth information” (Berg 2007:212). Case studies emphasise the detailed workings of the relationships and processes occurring within social settings, rather than restricting attention to the outcomes from these (Denscombe 2002:31). Thus they are particularly useful when the boundaries between the phenomenon and context are not clearly evident, or when

contextual conditions are considered highly relevant to the phenomenon of interest (Yin 2003:13), as in this thesis.

de Vaus (2001:221) emphasises that case study research in the social sciences must have a theoretical dimension, and that collecting and analysing information about the case must be guided by theory. *Instrumental case studies* examine cases to provide insight into an issue or refine a theoretical explanation. This approach is ‘theory oriented’: the goal is to use the case to test, refine or develop theoretical generalisations, while the actual case is of secondary importance. *Intrinsic case studies* on the other hand, are undertaken in order to better understand a particular case. As such, they are ‘case centred’. The purpose is not to test or develop theories but to *use* existing theories to better understand the case (Vaus 2001:221-4; Berg 2007:216).

This thesis undertakes a primarily intrinsic case study, whereby social constructionism is drawn upon to understand and interpret the climate change debate in Australia. Thus for the most part, generalisations that are made concern constructions of climate change and climate change discourses rather than social constructionist theory. Notwithstanding this, an element of theory testing is undertaken in the sense that this thesis tests the social constructionist premise that discourses and constructions matter. It also tests the usefulness of a weak social constructionist theoretical framework for investigating responses to climate change more generally, as well as the utility of the model for doing discourse analysis that was developed (and which will be described in Section 5.3).

The case study approach fosters the use of multiple sources of data and can be based on a mixture of quantitative and qualitative evidence (Denscombe 2002:40; Yin 2004:99). Bechhofer and Paterson (2000:57) argue persuasively for social scientists to be imaginative in their choice of research methods, emphasising that there are effective alternatives to traditional interview and survey techniques. In particular, they highlight the potential value of documentary materials, arguing that “the analysis of documents and other kinds of texts can be immensely rewarding” (Bechhofer and Paterson 2000:59). One significant advantage of published texts as a source of data is their availability and accessibility. They can also be used in a number of different ways within social science research, including:

- As a source of straightforward information about society;
- As a source of social commentary; and
- As the object of study, for what they reveal about society (Bechhofer and Paterson 2000:134-9; Sarantakos 2005:293-4).

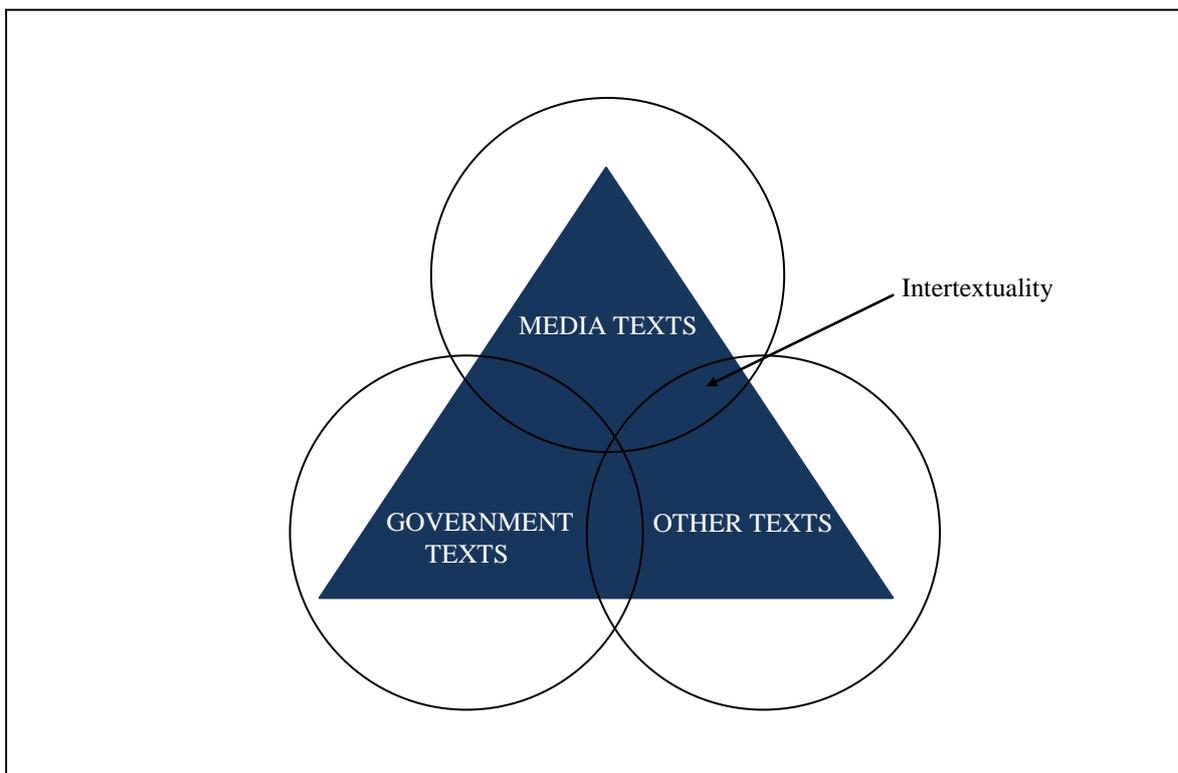
Texts were used in all three ways in this thesis, a decision that was strongly influenced by the social constructionist theoretical framework adopted. Social constructionism calls for methods that facilitate the identification and analysis of discourses. As discussed in Chapter 3, it is not possible to find ‘a discourse’ in its entirety so it is necessary to study texts for clues to the nature of the discourse, and bodies of text become the object of analysis (Phillips and Hardy 2002:4). Both the literature review and data collection phases of the project also influenced the choice of research method. Most of the key sources within the literature used documentary sources, and as I began to collect texts I realised that the challenge would not be finding sufficient data, but establishing parameters to limit the quantity of data collected. It soon became apparent that other methods of data collection would not be necessary.

## **5.2 DATA COLLECTION**

Since climate change first emerged into the public arena in Australia in the late 1980s, an extensive range of texts relating to climate change has been produced by a wide variety of different participants in the climate change debate. The media provide an extremely rich source of material and many of the studies reviewed in Chapter 3 focused exclusively on media sources. Some of these analysed television news programs (e.g. Wilson 2002; Smith 2005; Boykoff 2008a) but most used newspapers as the primary source of data (e.g. Trumbo 1996; McManus 2000; Dispensa and Brulle 2003; Boykoff and Boykoff 2004; Babe 2005; Boykoff 2008c; Doulton and Brown 2009; Antilla 2010). In order to capture unique aspects of both the broadcast and print media it was decided to sample from both of these facets of the mass media.

An important consideration in research design is the triangulation of data. Triangulation refers to the use of multiple methods and/or sources of data to allow the researcher to view a particular point from more than one perspective (Sarantakos 2005:145). While

triangulation cannot *prove* that the data or analysis is ‘correct’ it can provide valuable corroboration of the findings (Denscombe 2002:85-6). Triangulation also has the potential to enhance the validity and reliability of the analysis, because multiple sources of data can provide multiple measures of the same phenomenon. Conclusions are likely to be much more convincing and accurate if they are based on several different sources of information (Yin 2003:97-9; Sarantakos 2005:146). As discussed above, a single research method was adopted, however this method did incorporate the triangulation of sources, as illustrated in Figure 5.3.



**Figure 5.3 The triangulation of sources within this thesis.**

Rather than relying exclusively on media texts with their inherent biases, a wide range of texts produced by other actors and in different contexts were also collected including government policies, publications and press releases, and texts produced by international institutions, environmental organisations, industry associations and other groups. This section will outline the objectives of the data collection phase of this research and the strategies used to gather each type of data.

### 5.2.1 Media Texts

The media play an integral role in the complex social process through which environmental meanings and values are created, recreated and circulated. The ways that environmental issues are constructed in the media are important both for public understanding and political debate (Gamson and Modigliani 1989:1-2; Trumbo 1996:269; Carvalho 2005:1-2). The media can be seen to be “a site on which various social groups, institutions, and ideologies struggle over the definition and construction of reality” (Trumbo 1996:270). Dispensa and Brulle (2003:79) argue that without media coverage it is unlikely that important problems enter the public arena or become political issues. Sections of the media, through the combined activities of investigative journalists, film-makers and campaigning pressure groups, have been instrumental in bringing environmental issues to the forefront of popular and political consciousness (Burgess 1990:141). A key characteristic of media texts is the extent to which they feed upon and represent discourses from other genres and other forms of communication, a phenomenon that Fairclough (2003:192) calls *intertextuality*. As well as being a forum for the discourse of others, the media also directly contribute to the development and diffusion of wider social discourses (Burgess 1990:156; Carvalho 2007:224).

There is wide agreement within the academic literature that the mass media are a critical forum for the climate change debate, an important source of information about climate change for the public, and a factor influencing climate change politics (Weingart *et al.* 2000:261; Dispensa and Brulle 2003:79; Boykoff 2008a:3; Doulton and Brown 2009:191; Antilla 2010:1). Carvalho argues that:

As a central arena of social life and a privileged space for debating ideas, interpretations and propositions, the media are a crucial site for the definition and re-definition of meanings associated with climate change (Carvalho 2005:1-2).

The complex and diffuse nature of the issue leaves scope for media sources to have a particularly influential role in shaping climate change discourses (Carvalho and Burgess 2005:1459). It is therefore important to take into account the context in which media texts are produced, disseminated and consumed. As Boykoff (2008b:11) explains, “media communications unfold within larger contexts that include elements such as regulatory

frameworks, technical capacity challenges, cultural and institutional pressures, as well as journalistic norms”. These factors have significant implications not only for how stories are reported but also for what stories are reported. For example, Babe (2005:189) draws attention to the fact that about 80% of newspaper revenues are derived from advertising. This domination by advertisers constrains what is published in newspapers and broadcast on television. In essence, the media’s main order of business is manufacturing attention and delivering it to advertisers (Dispensa and Brulle 2003:84). Babe (2005:189) argues that:

From a business perspective, the editorial content of a newspaper, is the cost publishers incur to assemble readers for advertisers; newspaper owners sell readership to advertisers, and ‘content’ is their cost of producing this ‘audience commodity’, and should not detract from, and indeed ideally should contribute to, the effectiveness of the surrounding ads (Babe 2005:189).

For this reason, editorial content should not be inconsistent with the consumption ethic in general, or more specifically, with advertisements to procure particular goods and services. Babe therefore argues that it is important to consider the wide range of greenhouse-gas intensive goods and services being promoted by advertisers in both the print and television media (Babe 2005:219). Dispensa and Brulle (2003:75) conclude that the mass media may prefer not to depict the connections between consumer and corporate behaviour and the devastation of the environment because of the consequences it may have on their business.

Others consider the influence of journalistic norms and decision making. Boykoff (2008b:11) argues that:

Through interactions with complex and multi-level socio-political, ethical and economic factors and pressures, journalistic norms such as objectivity, balance, fairness and accuracy have shaped what becomes news, as well as how news is portrayed (Boykoff 2008a:3).

Trumbo (1996:281) highlights that “a good deal of journalistic direction that goes into shaping media coverage of an environmental issue occurs by way of deciding which sources to use and how much overall attention to give the issue”. Carvalho (2007:224) suggests that news values are applied to stories about environmental issues in much the same way as stories about other topics, with “novelty, controversy, geographic proximity

and relevance for the reader” important determinants in the selection of stories about climate change (Carvalho 2007:224). Antilla (2005:339) argues that:

The practices of news professionalism, along with modern news organisational systems, have been found to reinforce and legitimate the existing status quo. One of the paradoxes is that professional standards intended to prevent bias, such as *objectivity*, can create conditions that lead to systematic distortion of the news (Antilla 2005:339).

Russill (2008:139) agrees that journalistic conventions can lead to miscommunication about climate change observing that sometimes “inaccuracies are caused by news values which journalists are trained and socialised to work by”. In particular, Boykoff and Boykoff (2004) focus on the journalistic norm of balance:

Balance aims for neutrality. It requires that reporters present the views of legitimate spokespersons of the conflicting sides in any significant dispute and provide both sides with roughly equal attention (Boykoff and Boykoff 2004:126-7).

Boykoff and Boykoff (2004:126-127) contend that balanced reporting of this kind can actually be a form of informational bias, and has allowed a small group of climate change sceptics to have their views amplified through the media, as discussed in Chapter 3. Gelbspan (1998:57-58) agrees that the journalistic norm of balanced reporting causes problems when it is applied to scientific issues, asserting that “it seems to demand that journalists present competing points of views on a scientific questions as through they had equal scientific weight, when actually they do not.”

The Australian media play an important role in the way the issue of climate change is discussed and debated (McManus 2000:217; Farbotko 2005:280-7). As such, media texts offer insight into the wide range of perspectives about climate change being promoted within the public sphere. As part of this project, a comprehensive collection of media texts from a cross-section of sources was made in order to gain an understanding of who the main actors participating in the climate change debate in Australia were, and how they contributed to the discourses on climate change.

During 2007 a very large quantity of material relating to climate change was published in the Australian media. For the purposes of this study all the articles and transcripts

containing the keywords ‘climate change’ or ‘global warming’ in the title or lead paragraph were collected from:

- One state newspaper – *The Age*;
- One national newspaper – *The Australian*; and
- Two *ABC Television* programs – *The 7.30 Report* and *Lateline*<sup>39</sup>.

*The Age* is owned by Fairfax Media Limited, which also owns *The Australian Financial Review* and *The Sydney Morning Herald*, as well as 10 regional newspapers and 35 community newspapers in New South Wales and Victoria. In 2007, *The Age* had a circulation of 202 500 (weekdays) to 300 500 (on Saturdays). It is published and primarily available in Victoria, although it can be obtained from major newsagencies in other states and online (Fairfax Media 2007). All the articles relating to climate change appearing in *The Age* in 2007 were collected in print format. Having access to these articles in this form, captured the visual aspect lacking in online versions, providing insight into the prominence accorded articles (e.g. through position in newspaper and size of headlines), as well as accompanying pictures, photographs and diagrams (Gillen and Petersen 2005:150).

*The Australian* is owned by News Corporation, a company which also owns 5 state newspapers<sup>40</sup> and 95 community newspapers. *The Australian* is available throughout Australia and online, and in 2007 had a circulation of 134 610 (weekdays) to 298 107 (on weekends) (News Corporation 2007). In addition to a limited number of articles collected in print format, relevant articles published in the *Australian* were collected by using the database *FACTIVA*, to identify and download all the articles appearing with the terms “climate change” or “global warming” in their headline, or lead paragraph.

The ABC was established by the federal government in 1932 and operates under *The Australian Broadcasting Corporation Act 1983*. ABC television is broadcast throughout Australia and in 2007 the ABC’s 60 local and 4 national radio stations had approximately 6.4 million listeners each week. *ABC News Online* provides regular news updates as well

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<sup>39</sup> The texts collected from these sources represent the corpus which is analysed in Chapters 6, 7 and 8. A number of media texts from other sources were also collected to provide additional context (these sources are not included in any of the quantitative analysis).

<sup>40</sup> *The Daily Telegraph* (New South Wales), *The Herald Sun* (Victoria), *The Mercury* (Tasmania), *The Advertiser* (South Australia), and *The Courier Mail* (Queensland).

as access to transcripts of both radio and television broadcasts (ABC 2007). Two television programs identified as particularly relevant in reporting stories relating to climate change were *The 7.30 Report*, and *Lateline*, current affairs shows broadcast on weeknights at 7.30pm and 10.30pm respectively. The websites of these shows were systematically searched to identify and download the transcripts of all reports and interviews relating to climate change. It is recognised that by this did not allow for consideration of the visual or audio elements of these reports and interviews. However, while I viewed many relevant stories broadcast by these programs on television during 2007, it was not practical nor possible to analyse the broadcasts themselves in a systematic way. Despite this, it was thought that the benefits afforded by collecting and analysing the transcripts outweighed the disadvantages of not including visual or audio elements. In particular, the transcripts proved to be a particularly valuable source of verbatim quotes from prominent participants in the climate change debate, including activists, business representatives and key politicians, including the then Prime Minister, Opposition Leader and relevant Ministers, and Shadow Ministers.

In total, 1465 transcripts published by these media sources between January and December 2007 were collected and analysed.

### **5.2.2 Government Texts**

Climate change is an issue that transcends local, state, and national borders, both in terms of its impacts and the actions that need to be taken to address it. As such, while there is a wide scope to study how local and state governments around Australia have responded to the issue, the federal government's role in achieving a national response, participating in international efforts to address the issue, and shaping the public debate is of central importance. As such, this thesis focuses on this level of government.

Particular attention is paid to the Coalition Government under the leadership of Prime Minister John Howard which was in power from March 1996 until November 2007. Key policies and publications produced by the federal government during this period were collected in order to determine the ways that political and policy discourses construct climate change. The discrepancies or inconsistencies between political rhetoric, policy documents, and policy outcomes were also of particular interest. Relevant government

websites were regularly visited throughout 2006-2007, and the Prime Minister's and relevant Minister's websites were thoroughly searched for relevant press releases and speech transcripts.

Major government texts collected included the National Greenhouse Strategy (Commonwealth of Australia 1998a) which outlines in detail the principles and policies which comprised the Coalition Government's response to climate change. Although it was released in 1998, it remained the single most comprehensive statement of Australia's domestic climate change policy until the Coalition Government lost power in 2007. As such, it is of central importance in assessing Government's construction of climate change and the practical measures initiated to address the issue during this period. As a signatory to the UNFCCC, Australia is required to make regular reports to the UNFCCC Secretariat about its domestic and international actions to meet its obligations under the Convention. *Australia's Fourth National Communication on Climate Change* (Commonwealth of Australia 2005c), provides the most detailed description of Australia's climate change policies and programs during the case study period, and *Tracking to the Kyoto Target* (Commonwealth of Australia 2008) includes an assessment of the outcomes of these policies.

Speeches and statements made by members of government provided further insight into the government's approach to climate change, and several speeches and statements made by key members of government were collected. On 24 November 2007, a federal election resulted in a new Labor Government, led by Kevin Rudd. Between 24 November and 31 December 2007 all media releases and speeches made by Prime Minister Rudd, and the new Minister for Climate Change and Water, Senator Penny Wong, were collected to provide insight into the Labor Government's construction of climate change during this period.

### **5.2.3 Other Texts**

The final source of data was texts produced by international institutions, environmental organisations, industry associations and other groups. These further contributed to building a comprehensive picture of how climate change was constructed, and provided insight into

the positions held and activities undertaken by the wider range of actors involved in the climate change debate in Australia.

As discussed in Chapter 2, the Intergovernmental Panel on Climate Change (IPCC) was established in 1988, to assess available information on the scientific basis of climate change, its potential impacts, and the options for mitigation and adaptation (IPCC 2004:1-2). It has collated four major assessments of climate change, in 1990, 1995, 2001 and 2007. The summaries for policy makers of the three working group reports that comprise the Fourth Assessment Report (IPCC 2007a,b,c) were used to contextualise the scope and adequacy of Australia's response to climate change in terms of accepted scientific knowledge, and provide insight into the discourse of climate change science.

Similarly, a number of key documents produced by the United Nations Framework Convention on Climate Change (UNFCCC) were collected to place Australia's response to climate change within the context of international action on climate change including:

- The United Nations Framework Convention on Climate Change (UN 1992);
- A Guide to the Climate Change Convention and its Kyoto Protocol (UN 2002); and
- The Report of the Conference of the Parties on its Thirteenth Session (UN 2007).

In addition, several texts produced by the Asia Pacific Partnership on Clean Development and Climate (APP) were collected to provide insight into the Partnership's construction of climate change and potential solutions.

Environmental groups and other non-government organisations play an important role in raising awareness about climate change and lobbying governments for political action on the issue (Hutton and Connors 1999; Hall and Taplin 2007, 2008). A wide range of groups in Australia produce material relating to climate change, ranging from flyers and brochures providing the public with information about climate change and what can be done about it, to detailed policy statements and submissions to government inquiries relating to climate change. A cross-section of these texts was collected, including material produced by:

- The Australia Institute;
- The Australian Conservation Foundation (ACF);

- The Climate Action Network Australia (CANA);
- Friends of the Earth (FOE); and
- Greenpeace Australia.

It is widely recognised that business has a vital role to play in addressing climate change (Curran 2007). Many Australian businesses are recognising the need to consider the issue and are going beyond government regulations in seeking to increase energy efficiency and reduce their emission-intensity (e.g. ABROCC 2006; Curran 2007:247-8). At the same time, some business interests are strongly opposed to government intervention on climate change and lobby the government against action on climate change perceived to threaten their profitability (*Four Corners* 13 February 2006). To gain an understanding of the range of positions held by business in Australia, and the influence of business in shaping the construction of climate change, a collection was made of texts produced by business and industry associations including:

- The Business Council of Australia (BCA);
- The National Farmers Federation;
- The Australian Industry Greenhouse Network (AIGN); and
- The Australian Business Roundtable on Climate Change.

### **5.3 DATA ANALYSIS**

The wide range and variety of sources collected posed unique challenges for undertaking data analysis. As discussed in Chapter 3, a key task within the social constructionist theoretical framework, is the identification and examination of discourses. Discourse analysis provided a logical method of data analysis to address this challenge.

#### **5.3.1 Discourse Analysis**

Since the term was first coined by Zellig Harris in 1952, discourse analysis has come to mean many different things to different people (Hajer 1995:43; Paltridge 2006:2). Discourse analysis has deep historical roots in the analysis of ideology, the sociology of science, language philosophy and the work of Michel Foucault (1972; 1977). However, it was only more recently that the idea of a new and more systematic cross-discipline for the

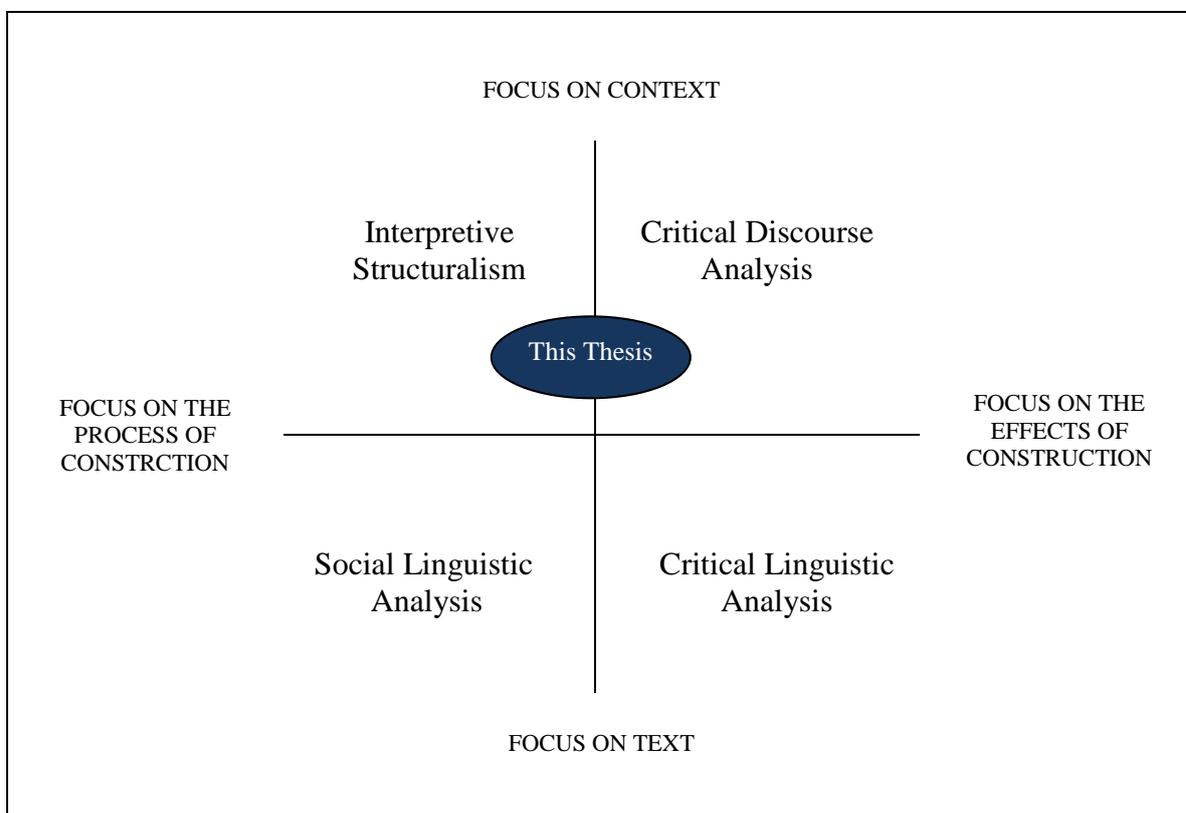
study of discourse began to take shape (van Dijk 1997:25). Several different disciplines including linguistics, anthropology, sociology and psychology have contributed to its development (Cameron 2001:47). Today, discourse analysis is undertaken across an equally diverse range of subject areas, including environmental studies (Bennett 1996:171; Feindt and Oels 2005:163). Hovden and Lindseth (2004:78) argue that in many ways it is a tool especially well suited to the study of responses to climate change.

Discourse analysis seeks to ascertain the constructive effects of discourse through the structured and systematic study of texts (Phillips and Hardy 2002:4). As discussed in Section 3.1, discursive activity does not occur in a vacuum. Rather, discourses emanate from social interactions within social settings. In order to understand discourses and their effects, it is therefore necessary to understand the contexts within which they are situated (Potter and Wetherell 2004:355; Carvalho 2008:162). Context can be defined as the structure of all the properties of the social situation within which discourses are produced and received. Recognising the importance of context, it becomes necessary to incorporate many aspects of society and culture in analysis (van Dijk 1997:20). Thus, as well as looking at patterns of language across texts, discourse analysis considers the relationship between language and the social and cultural contexts in which it is used (Paltridge 2006:2). In this sense, discourse analysis is ‘three-dimensional’, encompassing texts, discourses, and contexts (Phillips and Hardy 2002:4).

The relative importance accorded to these dimensions forms the basis for one way of classifying different types of discourse analysis. Phillips and Hardy (2002:21) categorise discourse analysis studies firstly according to whether the text or context is the primary concern. They then consider the degree to which research focuses on the *process* of social construction, or the *effects* of social constructions, identifying four types of discourse analysis as illustrated in Figure 5.4.

The vertical axis in Figure 5.4 represents the degree to which research focuses on the micro-analysis of individual texts or on the wider social context that surrounds the discourse or discourses being studied. The horizontal axis refers to the degree to which research focuses on the process of social construction, as opposed to the effects of social constructions, including “the dynamics of power, knowledge and ideology that surround discursive processes” (Peters 2012:79). Jansen (2008:108) emphasises that these categories

are not in conflict with one another. The axes represent continua rather than dichotomies, so combinations of elements of both axes are possible and usual, and both critical and constructivist approaches can be used in concert (Charmaz 2006:521).



**Figure 5.4 Four varieties of discourse analysis.** *Source:* developed from Phillips and Hardy (2002:19-21).

In terms of this thesis, it is not the texts themselves that are of primary concern, but rather what they reveal about the climate change debate in Australia. Both the process and outcomes of the social construction of climate change and options for addressing the issue are of interest. As such, a combination of interpretive structuralism and critical discourse analysis was pursued, as illustrated in Figure 5.4.

Early proponents of interpretive structuralism Morrow and Brown (1994:24) called for a greater recognition that social relations always have an interpretive dimension. They insisted that “meaning and language are the bases of forms of reality construction that both reveal and conceal the experiences of subjects,” arguing that meaning and structures are constantly produced and reproduced across space and time (Morrow and Brown 1994:24; Hosseini 2012:61). Interpretive structuralist studies are concerned with the way in which

broader discursive contexts come into being and the possibilities they give rise to (Jansen 2008:108). As such, interpretive structuralism focuses on both the analysis of social context and the discourses that support it (Hoque 2008:472). Milne *et al.* (2009:1221) explain that interpretive structuralism acknowledges both the constitutive role of discourses and the importance of context in understanding texts and discourses.

Thus while individual texts are considered, it is *bodies* of texts situated within the broader contexts of organisational networks, discourses and ideology that form the basis of interpretive structuralist analyses (Andersen 2006:39). Rather than conducting a microanalysis of individual texts, interpretive structuralist studies analyse texts for the insight they provide into the ‘bigger picture’ (Phillips and Hardy 2002:24). Some studies focus on the discursive production of organisational contexts (e.g. O’Connor 2000; Haeracleous and Barrett 2001; Andersen 2006; Milne *et al.* 2009). Other researchers have focused on broader, institutional or societal contexts and their evolution through time (e.g. Ellingson 1995; Wodak 1996; Steel 2009; Peters 2012). Phillips and Hardy (2002:25) argue that interpretive structuralist approaches can be particularly helpful in understanding macro-changes in discourses over time.

Critical discourse analysis (CDA), seeks to investigate the different implications of discourses for social action (Fairclough and Wodak 2004:361). It is concerned with the ‘hidden agenda’ of discourses and attempts to reveal the values, perspectives and positions that underpin them (Cameron 2001:123; Paltridge 2006:178). Particular attention is paid to how discourses may privilege certain ways of knowing and marginalise others (Boykoff 2008c:555). CDA recognizes that discursive practices may have significant ideological effects and can help produce and reproduce unequal power relations. It seeks to make more visible aspects or dimensions of reality that are obscured by an apparently natural and transparent use of language (Fairclough and Wodak 2004:354-8), and “highlight the ways in which ‘common-sense’ statements can disguise values that serve existing inequitable power relations, including those among people and between people and the environment” (Bennett 1996:170). CDA ultimately seeks to contribute to addressing social problems by “exposing and demystifying the causes and consequences of specific discourses and challenging dominant paradigms and unequal power relations” (van Dijk 1997:22; also see Carvalho 2008:162).

### 5.3.2 Doing Discourse Analysis

There is no one way of doing discourse analysis. A wide variety of approaches are taken by different authors. Some argue that it is impossible to provide a simple or standardized template for discourse analysis:

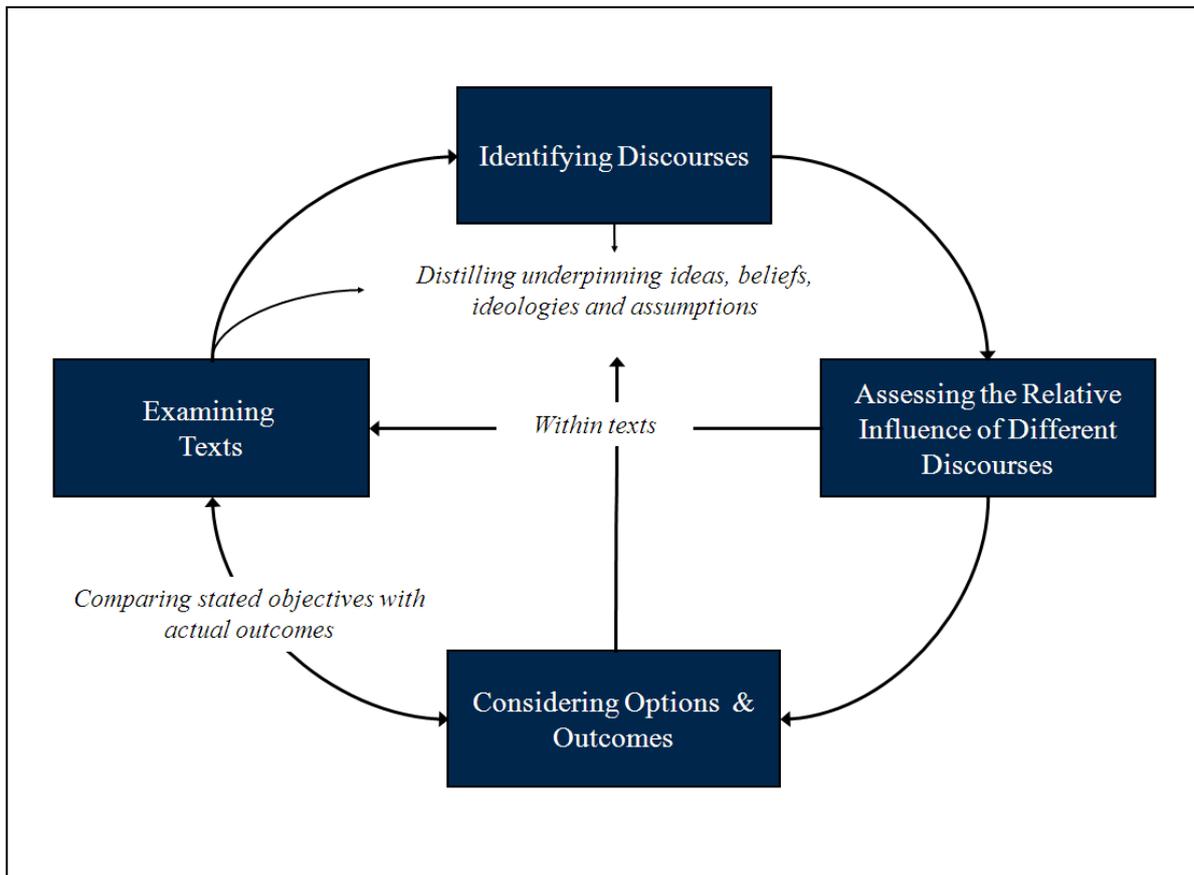
The breadth of discourse analysis techniques – from an emphasis on specific utterances to an analysis of a range of texts over time – and the diversity of the phenomenon under investigation mean that the form that analysis takes will vary from study to study... Researchers need to develop an approach that makes sense in light of their particular study and establish a set of arguments to justify the particular approach they adopt (Phillips and Hardy 2002:74).

Although I have undertaken a great deal of discourse analysis-related work, I have never found discourse analysis to be straightforward... there is rarely a clearly defined path for the researcher. This is a contested area and there are no blueprints as to how ‘best’ to proceed (Gillen and Petersen 2005:149).

Phillips and Hardy (2002:74-6) contend that although this individualist approach undoubtedly causes difficulties, and makes the task of analysing somewhat daunting, it provides a wide scope for creativity. It is in its contextual and interpretive sensitivity that that the benefits of discourse analysis lie. As such, to be too systematic or mechanical, undermines its very purpose which is to identify the many and varied meanings emerging from texts. Labour-saving forms of analysis, such as traditional content analysis, can be counterproductive because they aim at rapid consolidation of categories.

Phillips and Hardy (2002:76) highlight the usefulness of looking at the methods used by other studies in the same field. In this context, while several sources explicitly about discourse analysis methods were used (especially Bennett 1996; Dryzek 2005; and Carvalho 2008), key sources within the literature about climate change discourses proved particularly useful in developing an analytic framework for this thesis (especially Adger *et al.* 2001; Hovden and Lindseth 2004; Carvalho 2005; and Lindseth 2006). As applied examples of discourse analysis ‘in practice’ these sources provided invaluable insight into how discourse analysis can be undertaken in relation to climate change.

Figure 5.5 illustrates the specific model of discourse analysis that was developed and used during this project. It involves four stages: examining texts, identifying and characterising discourses, assessing their influence, and considering options, and outcomes.



**Figure 5.5** The conceptual model of discourse analysis developed in this thesis.

As suggested in Figure 5.5, this is a cyclical rather than linear process. Texts need to be examined more than once, and the character of discourses re-considered in light of outcomes. Each stage encompasses the consideration of a number of factors. These factors are summarised in Figure 5.6 which also highlights further connections between each stage of the process. Each of these stages and factors will be discussed in below.

### *Examining texts*

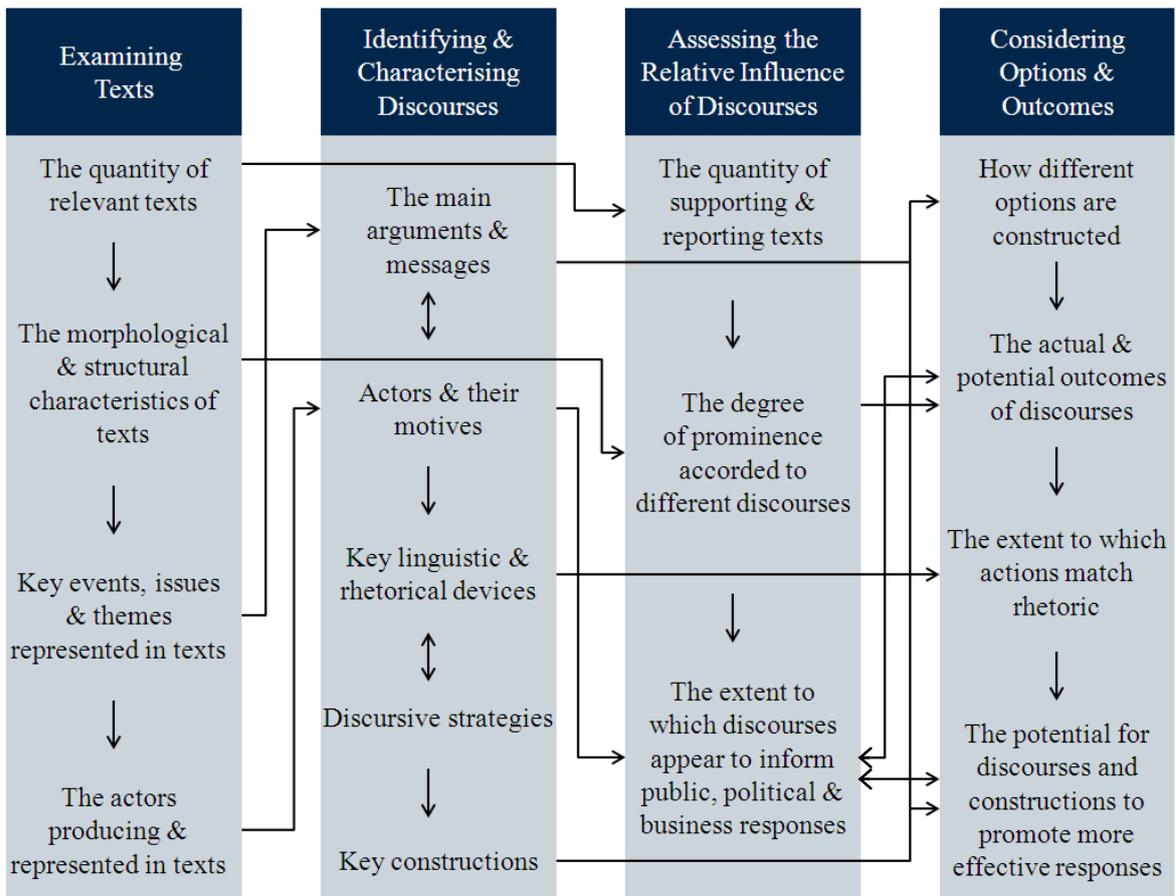
If bodies of texts are the material manifestation of discourses (Phillips and Hardy 2002:4), it follows that the first stage in undertaking discourse analysis needs to be a careful examination of the relevant texts. As discussed in Section 5.2, a wide variety of different types of texts were collected, which posed unique challenges for developing a systematic approach to examining texts. However, ultimately, five specific steps were developed as illustrated in Figure 5.6.

The first step was assessing the quantity of relevant texts. Carvalho and Burgess (2005:1462) argue that the volume of media coverage provides an important indication of the attention given to climate change over time. As well as tracing the media coverage of climate change in Germany between 1975 and 1995, Weingart *et al.* (2000:264) quantified the number of references to climate change in scientific periodicals and the German parliament during the same period. In this context, I began by assessing the volume of media coverage about climate change between 1987 and 2007 in *The Age* and *The Australian* respectively<sup>41</sup>. The number of references to climate change in the Australian parliament provided another quantitative measure of climate change texts and gave further insight into the prominence of the climate change debate in Australia during this period.

The next factor considered was the morphological characteristics and structural organisation of texts. Morphological characteristics are those features relating to the form of a text, whether it is a lengthy report, official website, newspaper article, radio broadcast, television advertisement, brochure, flyer, or bumper sticker. More specifically, in relation to newspaper articles, morphological features of interest include the section in which the article was published, the page number, and the size of the article (Carvalho 2005:2).

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<sup>41</sup> No measure for the volume of coverage by the ABC during this period was available.



**Figure 5.6 The factors considered in each stage of discourse analysis.**

Structural organisation refers to *how* specific texts are presented. Boykoff (2008b:13) argues that “the use of headlines and photographs can affect how events and situations are constructed by the public”. Thus it is important to consider what is chosen for the title of texts, what is mentioned in the first few paragraphs, and whether texts are accompanied by visual elements such as photographs or graphics (Gillen and Petersen 2005:150; Carvalho 2008:167).

The third step undertaken was identifying the key events, issues and themes represented in the texts in order to gain an understanding of the context within which the climate change debate took place (Weingart *et al.* 2000:264; Phillips and Hardy 2002; Doulton and Brown 2009:3). Attention was then turned to the actors producing and represented in texts. Gillen and Petersen (2005:150) argue that discourse analysis needs to account for the role of both the authors of texts and quoted sources. It is necessary to acknowledge both the definitional power of actors and direct interventions by actors within texts, as well as “who is quoted and/or referred to” (Boykoff 2008a:5). Bennett (1996:164) also argues that it is important to consider not only the role of the speaker or author’s position in the production of a text but also their ideological position and agenda.

#### *Identifying and characterising discourses*

The second stage involved identifying and characterising key discourses. Carvalho and Burgess (2005:1461) argue that “discourse sedimentation” is detectable when various discursive strategies and standpoints start to appear recurrently. Lindseth (2006:49) stresses that delimiting discourses is the task of the researcher – there are always other plausible labels that could be used for the particular contexts studied. For the purposes of this analysis five specific discourses were identified:

- Climate change science;
- Climate change activism;
- Climate change scepticism;
- Climate change business; and
- Climate change politics.

These five discourses represent five interwoven strands of the climate change debate during 2007. Each can be conceptualised in terms of a discourse coalition of actors sharing a common understanding of the issue of climate change, and using shared linguistic and rhetorical devices and discursive strategies to communicate arguments and promote constructions of climate change and options for addressing the issue. They are broad discourses. Each encompasses a wide range of positions with their proponents sometimes presenting a coherent narrative and at other times promoting conflicting messages.

It was originally my intention to explore all five of these discourses. However, it soon became apparent that doing so in depth would far exceed the word count permitted for this thesis. As such, a decision needed to be made about how to narrow the focus of the analysis. I observed a considerable degree of overlap between the different discourses, and it became evident that ultimately, actors participating in the climate change debate could be divided into those who sought action to address climate change and those who opposed it. For this reason I decided to focus on broadly defined discourses of climate change activism and climate change scepticism. In doing so, it was not my intention to perpetuate the sense sometimes presented in the media that these two discourses are equal and opposing sides in a debate about whether or not climate change is happening. Nor was it my intention to endorse the validity of the discourse of climate change scepticism in any way. Rather, I sought to illuminate both discourses and provide insight into their role in shaping the climate change debate in Australia.

In order to determine the relative influence and effect of discourses, it is first “necessary to pin down their content” (Dyrek 2005:17). To this end, Doulton and Brown (2009) argue that it is important to “lay out the fundamental components of discourses”. In seeking to do so, different authors use different numbers of components. For example, Dryzek (2005:17-9) argues that discourse can be characterised in terms of four key elements, while in their analysis, Hovden and Lindseth (2004) discuss up to 20 characteristics of Norwegian climate change discourses. In the context of this thesis five specific factors were considered as outlined in Figure 5.6.

The first, and perhaps most fundamental factor was the main arguments and messages of each discourse. Adger *et al.* (2001:685) emphasise that “a discourse contains a corpus of expressions in which we can find homogeneity in message”, embodying a certain

knowledge and perception of the phenomenon in question, as well as shared beliefs concerning both causes and appropriate responses to problems. As such, it is possible to identify the dominant topics, propositions, themes, and broad concepts, and the relative importance placed on different problems within each discourse (Bennett 1996:65; Hovden and Lindseth 2004; Dryzek 2005:17). Within broadly defined discourses such as those identified in this thesis, it is also important to recognise the *range of positions* taken by proponents. Homogeneity of message does not necessarily mean adherence to a single argument, and it may be possible to identify a spectrum of viewpoints. Finally, it is necessary to consider how actors seek to justify positions and decisions, the ethics employed, and how discourses seek to derive legitimacy and credibility (Weingart *et al.* 2000; Hovden and Lindseth 2004).

Many authors point to the central role of actors and their motives (both as individuals and groups) in producing, transforming and perpetuating discourses (e.g. Bennett 1996:164; Adger *et al.* 2001:684; Dryzek 2005:18; Lindseth 2006:48). It is therefore necessary to identify the principle actors associated with each discourse. The more general ‘membership’ of each discourse can then be assessed (Hovden and Lindseth 2004; Pettenger 2007a:12). It is important to consider the interests of actors participating in discourses, as well as changing relations between actors (Lindseth 2006:48, 59). In addition to considering actors participation in discourses, it is crucial to consider both how actors are used as ‘sources of authority’ within discourses on the one hand or cast as heroes, villains or victims on the other (Adger *et al.* 2001:685; Doulton and Brown 2009).

Discourses depend crucially on metaphors, and other linguistic and rhetorical devices. These are used to convince listeners or readers by putting a situation in a particular light (Dryzek 2005:18-9; Doulton and Brown 2009:3). Adger *et al.* (2001:685) refer to this factor as the “expressive means” of a discourse, while Boykoff (2008a:5) sought to characterise the “terminology, tone and tenor” of relevant texts. Bennett (1996:164-6) highlights the importance of lexical choice, using the classic example of the different connotations associated with the term “freedom fighter” as opposed to “terrorist”. She explains upon how lexical and grammatical choices may serve a particular ideological interest “through the careful or unconscious manipulation of language”. Meaning can be conveyed and/or transformed by ‘nominalization’ and ‘passivization’, which can obscure the role of power and agency (Burr 1995:114; Carvalho 2008:168). The use of inclusive

pronouns ('we', 'our' etc.) and exclusive pronouns ('they', 'their' etc.) can also play a significant role in positioning actors and asserting power (Fairclough and Wodak 2004:362; Gillen and Petersen 2005:149).

The linguistic and rhetorical characteristics of the discourses also contributed to the fourth factor considered, which was the discursive strategies associated with each discourse. Carvalho (2005:3) defines discursive strategies as “forms of discursive manipulation of reality by social actors in order to achieve a certain goal or effect”. They can be ‘read’ directly from texts authored by actors and indirectly from quotes and reports of non-linguistic actions within other texts. Carvalho identifies four types of discursive strategies to consider. *Analytical strategies* are those involved in analysing an issue (saying what it is or what it is about). *Evaluative strategies* relate to or are based on judgment of the value, importance, or quality of something. *Positioning strategies* are used by actors to frame other actors or discourses, while *relational strategies* are used by actors to define and position themselves in relation to other actors, discourses and the wider social context (Carvalho 2005:8-9; also see Burr 1995:122 and Gibbs 2004:310-1). For the purposes of this study, particular attention was paid to the positional and relational strategies associated with the discourses of climate change activism and climate change scepticism.

Finally, the ways each discourse constructed the issue of climate change was considered. This factor relates to how key issues are defined or “framed”, and attributed with certain characteristics and values (Capek 1993). It is necessary to look at how different discourses construct key concepts and how these understandings translate into responsibilities for different actors (Weingart *et al.* 2000:264; Carvalho 2005; Lindseth 2006:61-3). Hovden and Lindseth (2004) contend that the scale discourses frame issues in, is of particular relevance, while Carvalho and Burgess (2005:1462) argue that it is important to consider “silences and omissions”, what is *not* addressed within each discourse.

#### *Assessing the relative influence of discourses*

Having identified and characterised key discourses, the third stage in the model of discourse analysis developed involved assessing the relative influence of each discourse. In simple terms, “what difference do they make?” (Dryzek 2005:19). Following the example of Boykoff (2008c) and Doulton and Brown (2009), an initial, quantitative assessment of

the influence of each discourse was made on the basis on the number of supporting and reporting texts. Supporting texts are those that can be seen to be situated within or strongly promoting a particular discourse. Less overt, but equally important are reporting texts which dedicate time and/or space to describe the position or perspective of a particular discourse (or more than one discourse). Next, the degree of prominence accorded to each discourse within the texts was assessed. In particular, the number of front page stories, feature stories and editorials supporting and reporting each discourse was quantified and compared.

The third factor considered in this stage was the extent to which each discourse appeared to have informed public, political and business responses to climate change. Hovden and Lindseth (2004) argue that it is important to assess which discourses appear to have the “rhetorical advantage”. Similarly, Lindseth (2006:52) suggests that it is necessary to consider the “resonance” of different discourses over time. In this context, Boykoff (2008b:15) argues that the “discursive sway” of assertions, however nonsensical, needs to be considered. Of particular interest is the way discourses can structure or dominate the terms of the debate about an issue. In more practical terms, a key task is to consider discourses’ “concrete means of effect” (Carvalho 2008:165), and identify how discourse “actively or passively legitimate, justify or undermine different courses of action” (Lindseth 2006:53). Specifically, Dryzek (2005:20) calls attention to the impacts of discourse on policies and institutions, arguing that “the impact of a discourse can often be felt in the policies of government or institutional structure”.

This stage is based on the assumption that discourses contribute in shaping public, political and business responses to climate change. This is clearly a very complex relationship, and not one that can be easily distinguished from other influencing factors. There is no way that the influence of discourses can be directly ascertained. In this context, MacCallum *et al.* (2013:4) explain that within the critical discourse analysis tradition, “texts are treated as realisations of – and therefore as hard evidence for – discourses and practices that serve to (re)produce ideologies and social relations” (also see Chouliaraki and Fairclough 1999; Fairclough 2003; Weiss and Wodak 2003). So it is only possible to scrutinise texts for evidence of the influence of discourses. Of course this approach has its limitations, limitations which are recognised by those using discourse analysis to investigate environmental issues. For example, MacCallum *et al.* (2013:6) explain that:

It is not our intention to suggest that text analysis can present a complete picture of the social and institutional processes through which documents are developed; nor that there is a simple one-to-one correspondence between the documented policies of an organisation, its values, and its material strategies (Green *et al.* 2012; Richardson and Jensen 2003). However, we do see published texts as a useful point of entry to understanding the transscalar institutional conditions shaping local capacity to act: they work to reproduce the legitimacy and authority of certain framings and strategies and, conversely, to marginalise framings and interests that they ignore (MacCallum *et al.* 2013:6).

As discussed in detail in Chapter 3 this approach can indeed offer valuable insights into the climate change debate. Thus the challenge is to use discourse analysis as effectively as possible to shed light upon the potential influence of key discourses both within the climate change debate and within public, political and business responses to the issue, while remaining sensitive to other discursive and non-discursive factors and their influence (Trumbo and Shanahan 2000:201; Adger *et al.* 2001:709; Phillips and Hardy 2002:416 ).

#### *Considering options and outcomes*

The fourth and final stage undertaken was considering options and outcomes. As illustrated in Figure 5.6 this stage represents the culmination of the three previous stages and their constituent steps. It also incorporates the third research question: how are different options for addressing climate change constructed? As discussed in Section 3.2, different discourses evoke different solutions to the problem of climate change (Adger *et al.* 2001). Some discourses insist that certain options are impossible while others argue that the very same options are not only possible but potentially profitable. Dryzek (2005:21) calls for “critical analysis of the promise and peril attached to each discourse in its contribution to environmental debate, analysis and action”. In this context, how each discourse framed options for addressing climate change, and the implications of these constructions were considered. This is the step which is reached in the analysis chapters of this thesis. However, Figure 5.6 illustrates three additional steps that offer the potential to extend the discourse analysis process further, some aspects of which are touched upon in the discussion.

The outcomes that can be attributed to each discourse can be examined. Sometimes these outcomes are unintended consequences. For example, Boykoff and Rajan (2007:210)

highlight how confusion about climate change can lead to inaction. However, they go on to demonstrate how in some instances confusion has been deliberately fostered in order to achieve this outcome. It is therefore necessary to consider both intended and unintended outcomes, and look for underlying interests and motivations (e.g. Carvalho 2007:237). Sometimes discourses incorporate statements about their aims or intentions. In such instances, Bennett (1996:170) argues that it is important to clarify the “disparity between aims and actuality”. Thus the third factor is the extent to which rhetoric reflects reality. One way of assessing this factor is by comparing the objectives stated within key texts, such as government policies, with the empirical outcomes of those policies; considering first, to what extent the objectives have been met, and second, how consistent they are with the broader arguments and messages promoted by the discourse. Finally, discourse analysis has the scope to assess the potential for current and future discourses and constructions to promote more effective responses and ultimately, contribute to achieving solutions.

## **CONCLUSION**

This chapter has provided an overview of the theoretical and methodological tools that were used to investigate the research questions. The discursive approach of social constructionism was chosen for the flexible theoretical framework it provides. In particular, it recognises the important role of texts in producing and promoting discourses which in turn shape social responses to issues such as climate change. The premise of social constructionism is that discourses and constructions have important implications, and this thesis tests this premise in the context of the climate change debate in Australia.

A number of excellent studies demonstrate the utility of this approach to studying constructions of climate change (e.g. Hovden and Lindseth 2004; Carvalho 2005; Boykoff 2008a; Doulton and Brown 2009). Each of these studies investigates varied bodies of texts to clarify and analyse the discourses framing and constraining social responses to climate change. For this reason, the collection of texts formed the basis for data collection in this thesis, and a wide range of media, government, and non-government texts were collected and analysed.

Discourse analysis provides a powerful analytic tool to investigate the process of social construction. The challenge lies in developing an operational analytic framework. Drawing

upon the work of Carvalho (2005; 2008), Dryzek (2005), and Lindseth (2004; 2006) among others, a four stage process was developed to facilitate the examination of texts, identification and characterisation of discourses, assessment of their relative influence, and consideration of the options they espouse. The next four chapters will utilise this process to analyse the data collected and address the three research questions.

## Chapter 6: The Climate Change Debate in Australia During 2007

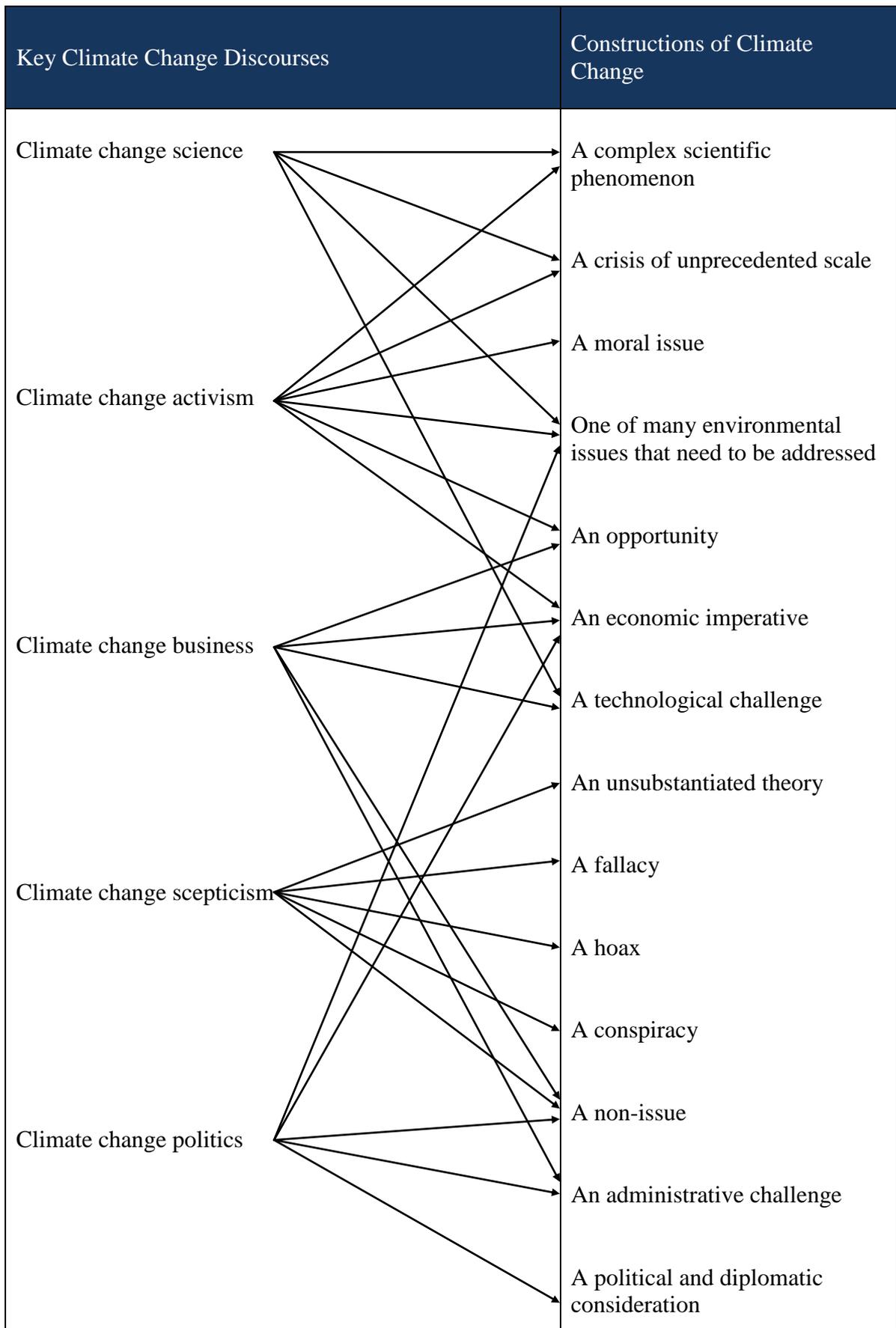
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### INTRODUCTION

As discussed in Chapter 5, five discourses were identified within the texts analysed: the discourses of climate change science, climate change activism, climate change business, climate change scepticism, and climate change politics. Through and within these discourses, climate change is constructed in many different ways as illustrated in Figure 6.1. By some, climate change is constructed as a purely scientific phenomenon, to others it is a crisis affecting every facet of the natural environment and human society, while sceptics continue to construct climate change as a fallacy or hoax.

A significant degree of overlap was observed between the five discourses and the constructions they give rise to. The discourse of climate change science was drawn upon by each of the other four discourses. At the same time, most climate change scientists also participated in the discourse of climate change activism. Similarly, as well as contributing to the discourses of climate change business and politics, business and political actors tended to also participate in either climate change activism or scepticism. This thesis therefore focuses on the two discourses at the centre of this web of discourses and constructions. Chapter 7 will examine the discourse of climate change activism, and Chapter 8 will explore the discourse of climate change scepticism.

First however, this Chapter seeks to provide a broad overview of the data. This thesis uses 2007 as a point of focus within the case study, so the majority of the primary data collected was produced in 2007. This chapter will review this data within the context of the broader climate change debate in Australia that was described in Chapter 4. In doing so it will fulfil the first stage of the model of discourse analysis developed in Chapter 5: 'examining texts'. In particular, it will consider the quantity of relevant texts, the morphological and structural characteristics of texts, key events, issues and themes, and the actors producing and represented in texts.



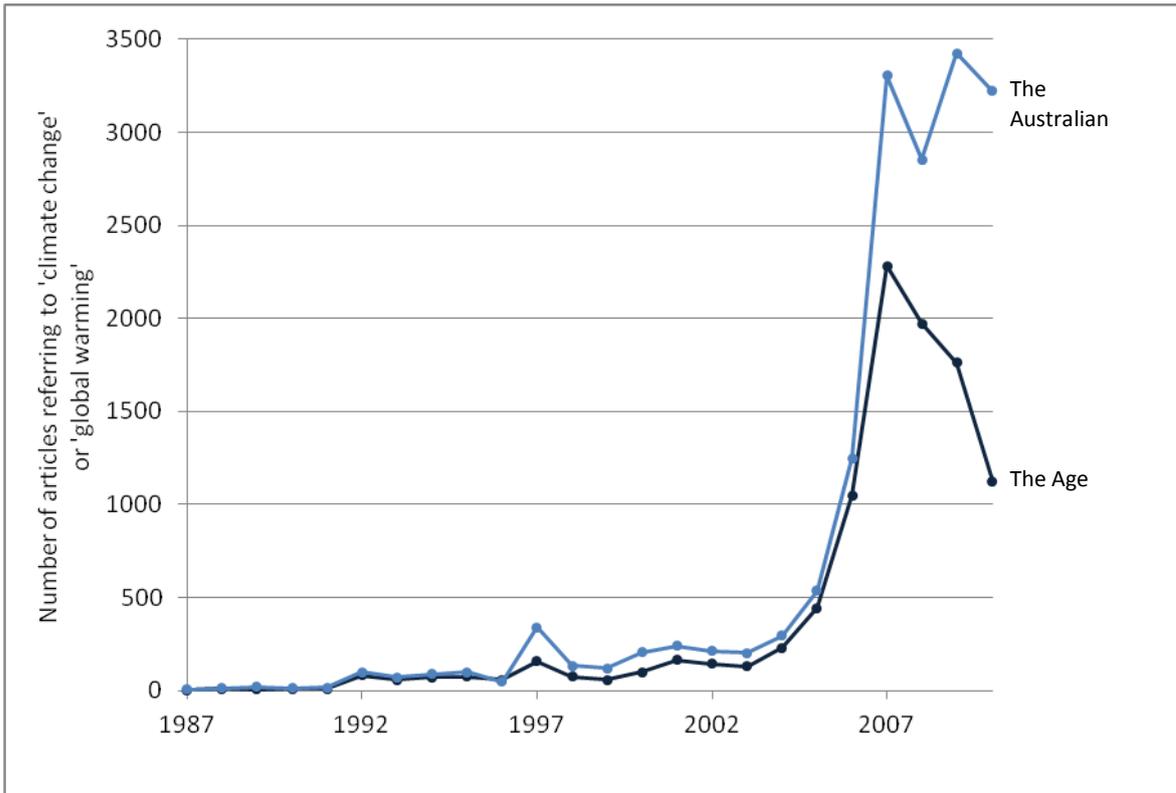
**Figure 6.1 Five climate change discourses and the constructions they give rise to.**

## 6.1. THE QUANTITY OF RELEVANT TEXTS

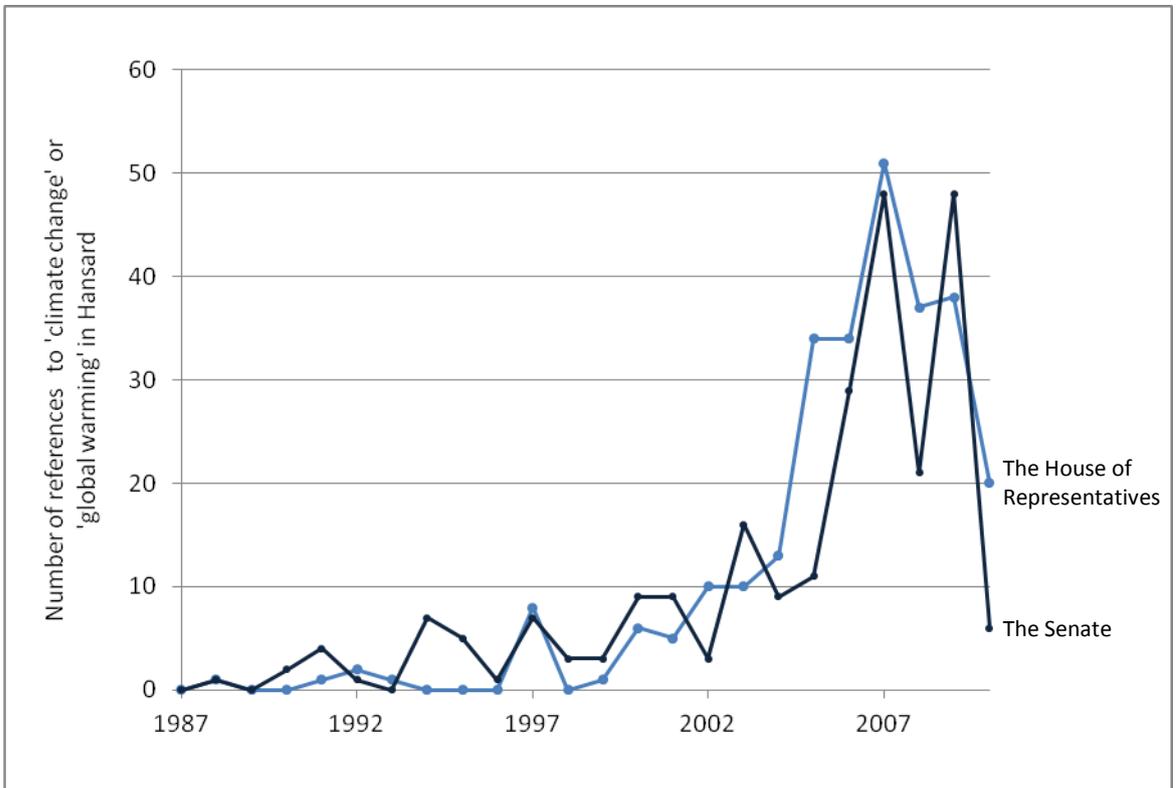
Climate change first emerged from the realms of scientific enquiry into the public arena approximately twenty five years ago, with the earliest newspaper articles about climate change in Australia appearing in the late 1980s (e.g. Montgomery 20 February 1988; Gribbin 13 March 1989; Linacre 2 May 1989). As discussed in Chapter 5, tracking the occurrence of texts relating to climate change is one way of assessing the relative prominence of the issue (Carvalho and Burgess 2005:1462). After heightened media interest in 1992 with the Earth Summit and ratification of the United Nations Framework Convention on Climate Change (UNFCCC), and in 1997 with the adoption of the Kyoto Protocol, media coverage in climate change waned until the start of 2005. Since 2005 there has been a significant increase in media coverage about climate change, as illustrated in Figure 6.2.

Such a shift is also evident in the dramatic increase in government texts produced during the mid to late 2000s. Indeed, the extremely limited number of government texts about climate change during the nineties and early 2000s, is a strong indicator of the low priority accorded to the issue by both the Keating and Howard governments. Climate change was first raised in Federal Parliament by Robert Tickner the then member for Hughes in 1988. However, as shown in Figure 6.3, climate change was scarcely mentioned in either the House of Representatives or the Senate until 2005. In 2007, there were almost twice as many references to climate change than in any previous year (and more than any year since). The then Prime Minister Howard made 27 speeches or media releases relating to climate change during 2007, compared to a *total* of four speeches relating to climate change over the previous ten years.

Although no quantitative measure of the total number of texts produced by international institutions, environmental organisations, industry associations and other groups is available, anecdotal evidence suggests that they also dramatically increased in volume during the mid to late 2000s as climate change gained a higher public profile. Since 2007 this heightened awareness and interest in the issue has abated to a certain extent. However, the extensive range of texts relating to climate change produced in 2007 provides a very rich source of written, visual and spoken texts that can be analysed with a view to characterising the discourses shaping the climate change debate in Australia.



**Figure 6.2 The prevalence of climate change in two major Australian newspapers.**



**Figure 6.3 References to climate change in Australian parliament.**

## 6.2 THE MORPHOLOGICAL CHARACTERISTICS AND STRUCTURAL ORGANISATION OF TEXTS

As well as yielding a large quantity of texts, the climate change debate in Australia has given rise to a very diverse range of different *types* of texts, including a wide variety of media texts, government texts and texts produced by international institutions, environmental organisations, industry associations and other individuals and groups.

### 6.2.1 Media Texts

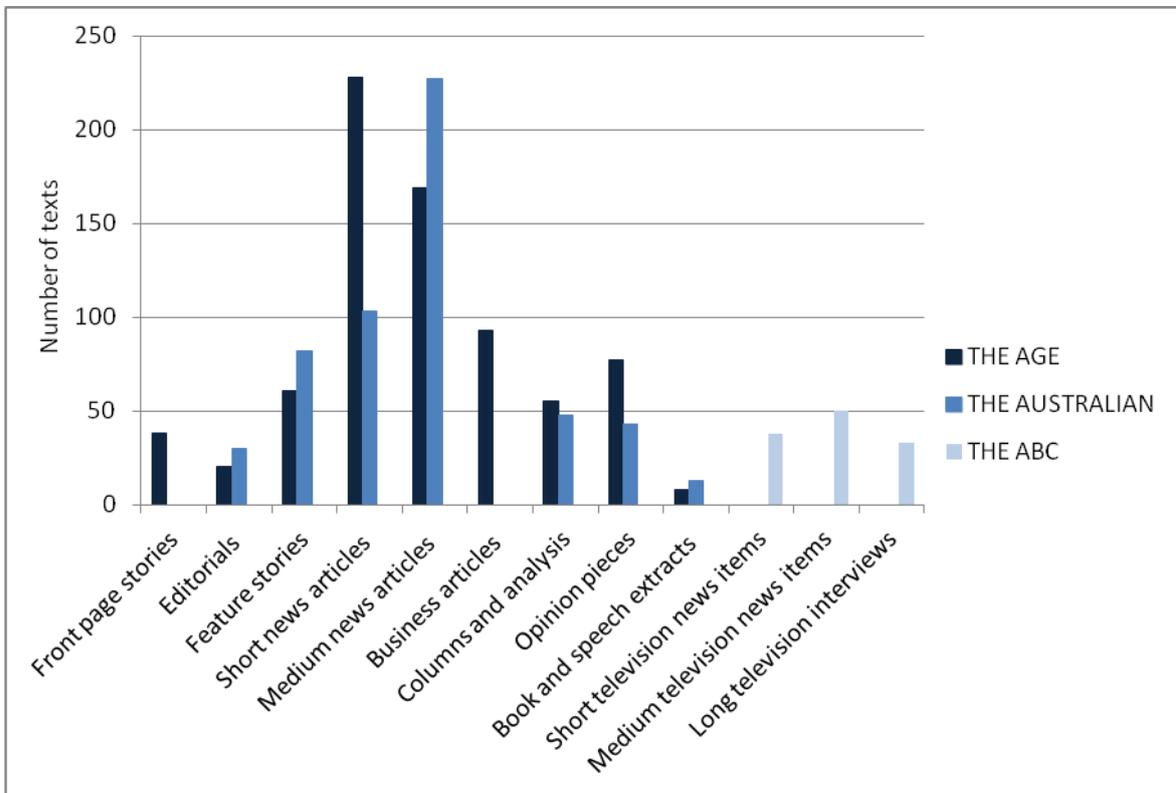
Whereas early media articles about climate change tended to be restricted to the science section of newspapers (Ungar 1992:490), the issue has increasingly permeated newspapers, with frequent front page stories, feature articles, editorials, columns, opinion pieces and stories in the business section. Figure 6.4 illustrates the number of each of these types of media texts that were published about climate change in *The Age* and *The Australian*<sup>42</sup> during 2007. It also illustrates the number of *The 7.30 Report* and *Lateline* television news items and interviews about climate change that were broadcast by the ABC. Front-page stories are of particular interest, reflecting important editorial decisions about the significance of particular stories, with front page stories receiving far greater public exposure than stories deep within the newspaper (Boykoff 2008b:13). The impact of front page stories is also increased by the use of large headlines and coloured photographs, and front-page stories inform morning radio news bulletins, talkback sessions and television news stories (Craig 2004:80).

As shown in Figure 6.4, by far the most numerous newspaper texts were short to medium news articles. These articles were often triggered by specific events and tended to be primarily descriptive. Many were largely quote-based, relying heavily on statements made by actors or excerpts from reports. There were also a large number of articles published in the business section of *The Age*. On 12 February 2007, the Age launched a new weekly supplement within the business section entitled *New Economics*, which aimed “to capture and cover what is becoming a revolution in our economy and markets” and bring “valuable

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<sup>42</sup> Because *The Australian* articles were collected online, it was not possible to quantify the number of front page stories or stories in the business section (depending on their length, these articles are therefore shown in Figure 6.3 as short, medium or feature-length articles).

insights into the historic shift towards dealing with the challenges and opportunities presented by climate change and other economic issues” (Short 12 February 2007).



**Figure 6.4 The different types of media texts about climate change during 2007.**

Newspaper feature stories proved to be particularly rich texts. While many were still largely descriptive, their longer format allowed for more in-depth coverage of events, issues and themes, and the incorporation of more varied viewpoints. At the same time, many feature stories included a degree of commentary or analysis either by quoted actors, journalists or both. *The Age* feature stories which were collected in print format also often incorporated visual elements including photographs, cartoons, graphs or diagrams. These visual elements not only increase the impact of the written text, but constitute objects for analysis in their own right, and the nature and significance of some of these visual elements will be considered in Chapter 7.

Editorials, usually written by the editor or a senior editorial staff member, are the public voice of newspapers, and often also profess to be the collective voice of their readers. They tend to attract most attention around election time, when they support particular political parties (Craig 2004:81). As such, editorials provide insight into the ideological stance of

different newspapers in relation to climate change and Carvalho (2007:40) considers the frequency of dismissive editorials in three British newspapers. In 2007 *The Age* published 20 editorials about climate change, and *The Australian* 30. Sixteen out of the 20 *Age* editorials (80%) took an activist stance, arguing that climate change is serious, criticising government inaction and promoting effective responses to climate change (the remaining four were neutral). In contrast 26, out of the 30 *Australian* editorials (87%) took a sceptical stance and were dismissive of concern about climate change (with four neutral editorials).

Like editorials, the columns analysed differ from the other types of texts discussed so far in that the authors openly express their personal opinions (Craig 2004:77). While a number of columnists addressed complexities of the climate change debate, in general a tendency amongst columnists to choose relatively minor or trivial aspects of the climate change debate to discuss was observed. Columns were also among the most ideologically oriented texts collected. The articles identified as 'analysis' varied considerably. A number of fairly short articles published in *The Age* were identified as such with 'Analysis' or 'Comment' written beneath their headlines. Other longer articles were categorised as analysis if they presented critical or analytical content (but were not editorials or opinion).

Opinion pieces were a particularly interesting genre. Similar in many ways to analysis or comment, the distinguishing feature of opinion pieces is that they are not generally written by journalists but by a wide range of different actors including academics, activists, businesspeople, and politicians. As such, the opinion pieces collected provided insight into the views and positions of many different actors. Similarly, while relatively small in number, the book and speech extracts that were collected provided a diverse range of viewpoints.

Both ABC Television current affairs programs, *The 7.30 Report* and *Lateline*, featured a significant number of news reports and interviews relating to climate change. While the visual and audio elements are obviously lacking, the transcripts for these items nonetheless proved to be valuable texts. In particular, the often lengthy interviews provided a very rich source of verbatim quotes from many prominent participants in the Australian climate change debate, including climate change scientists, activists, business people and senior politicians including the then Prime Minister, Environment Minister, Leader of the Opposition, and Shadow Environment Minister.

### **6.2.2 Government Texts**

As discussed in Chapter 5, a variety of government texts were collected and analysed. These texts varied considerably in terms of their morphological and structural characteristics. They ranged from lengthy and detailed policy documents and scientific reports, to educational materials aimed at the general public, including single-sided flyers as well as more substantial brochures and booklets.

In total 31, speeches and statements made by the then Prime Minister John Howard were collected and analysed. These ranged from brief media releases to several extended speeches. During his time as Prime Minister, John Howard also delivered weekly radio messages each Sunday night, and five of these were about climate change during 2007. As shown in Figure 6.3, climate change was raised an unprecedented 54 times in the Australian House of Representatives and 48 times in the Senate in 2007. These extracts, including brief questions without notice, as well as speeches and ministerial statements, were collected and analysed as another primary source of political discourse. One of the benefits of the Hansard extracts collected was that they provided insight into a wider range of political perspectives including those of members of the government, the opposition party, the Democrats, and the Greens.

### **6.2.3 Other Texts**

The morphological and structural characteristics of the ‘other’ texts collected were even more diverse, including extremely detailed Intergovernmental Panel on Climate Change (IPCC) reports and UNFCCC agreements. At the other end of the spectrum, a number of bumper stickers produced by environmental groups consisted of single slogans, such as “I care about climate change” or “Let’s stop climate change”. In between these two extremes a wide range of different texts produced by environmental organisations, business associations and other groups were collected, including advertisements, brochures, booklets, policy statements and submissions to government enquiries. These were aimed at a range of different audiences, including the general public, potential customers, current clients, and the government, and contained varying levels of detail and formality.

Finally, a number of books and films about climate change were analysed. Although it was released in 2006, the documentary *An Inconvenient Truth* by Al Gore featured prominently in the Australian media during 2007. Similarly the British documentary *The Great Global Warming Swindle* televised in Australia in July 2007 gave rise to extensive debate within the media more generally. The year 2007 also saw the publication of a wide range of books about climate change by Australian authors aimed at a public audience including: *High and Dry: John Howard, Climate change and the Selling of Australia's Future* by Guy Pearse, *Scorcher: The Dirty Politics of Climate Change* by Clive Hamilton, *Reaction Time: Climate Change and the Nuclear Option* by Ian Lowe, and *Greenhouse Solutions with Sustainability* by Mark Diesendorf.

### **6.3 KEY EVENTS, ISSUES AND THEMES REPRESENTED IN TEXTS**

A large number of processes and events relating to climate change occurred in 2007, these varied from minor incidents<sup>43</sup>, to massive international conferences, as illustrated in Table 6.1, which presents a time line of some of the main events that took place.

Some of these events triggered significant numbers of media texts, in some cases over just a few days, and in others over a period of weeks or months. It is interesting to note that some texts themselves constituted events. In particular, the four major IPCC reports released in January, February, May and November could be considered 'critical discourse moments', representing turning points in the discourse of climate change science in Australia. Each resulted in a huge increase in media texts about climate change. So too did the major international meetings that took place during 2007, particularly the G8 Summit in Germany in June, the APEC Summit in Sydney in September, and the UNFCCC conference in Bali in December. Significant activist events included Earth Hour in March, Live Earth in July and Walk Against Warming in November, while a major sceptic event was the televising of Martin Durkin's documentary *The Great Global Warming Swindle* in July 2007.

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<sup>43</sup> Babe (2005:199) draws attention to the multitude of 'pseudoevents' around climate change including special studies, speeches, polls, announcements, name callings, threats, news leaks, press releases and letters which are reported as 'news' within the media.

**Table 6.1 Major climate change events during 2007.**

JANUARY	<ul style="list-style-type: none"> <li>• Climate activist Tim Flannery is named ‘Australian of the Year’</li> </ul>
FEBRUARY	<ul style="list-style-type: none"> <li>• The IPCC releases the findings of its Working Group I</li> <li>• Climate change features prominently in the first week of federal parliament</li> <li>• The Prime Ministerial Task Group on Emissions Trading releases its interim report and businesses and NGO’s begin making submissions</li> <li>• The leader of the Greens Bob Brown calls for the phasing out of coal exports</li> <li>• The Environment Minister Malcolm Turnbull announces that the government is going to phase out incandescent light bulbs</li> </ul>
MARCH	<ul style="list-style-type: none"> <li>• <i>Nine Facts about Climate Change</i> by climate change sceptic Ray Evans is launched at Parliament House</li> <li>• Nicholas Stern visits Australia</li> <li>• The government announces its Forestry Fund</li> <li>• The IPCC releases the findings of its Working Group II</li> <li>• The Opposition Leader Kevin Rudd holds a climate change summit in Canberra</li> <li>• Earth Hour is held in Sydney (participating businesses and households turn out their lights for one hour)</li> </ul>
APRIL	<ul style="list-style-type: none"> <li>• Climate change features on the agenda at the Council of Australian Governments meeting</li> <li>• The federal opposition and state Labor governments launch the Garnaut Review</li> </ul>
MAY	<ul style="list-style-type: none"> <li>• The IPCC releases the findings of its Working Group III</li> <li>• Climate change features in the Federal Budget</li> <li>• The government launches its <i>Climate Clever</i> public education campaign</li> <li>• The Prime Ministerial Task Group on Emissions Trading releases its final report</li> </ul>

JUNE	<ul style="list-style-type: none"> <li>• US President George Bush proposes ‘a new global framework’ to replace the Kyoto Protocol after 2012</li> <li>• Climate Change features on the Agenda of the G8 Summit in Germany</li> </ul>
JULY	<ul style="list-style-type: none"> <li>• <i>The Great Global Warming Swindle</i> is televised on the ABC</li> <li>• Live Earth Concerts are held in Sydney, Tokyo, Shanghai, Hamburg, London, Johannesburg, New York and Rio de Janeiro</li> <li>• John Howard makes a climate change announcement on YouTube</li> <li>• The Australian Climate Exchange opens</li> </ul>
AUGUST	<ul style="list-style-type: none"> <li>• IPCC Chairman Rajendra Pachauri visits Australia</li> </ul>
SEPTEMBER	<ul style="list-style-type: none"> <li>• Climate change features on the agenda at APEC in Sydney, and the ‘Sydney Declaration’ is announced</li> <li>• Al Gore visits Australia</li> <li>• The North-West Passage is ice-free for the first time</li> <li>• The US hosts two climate change meetings in New York</li> <li>• The government announces a new ‘Clean Energy Target’</li> </ul>
OCTOBER	<ul style="list-style-type: none"> <li>• The IPCC and Al Gore receive the Nobel Peace Prize</li> <li>• The federal election is announced and the election campaign begins</li> </ul>
NOVEMBER	<ul style="list-style-type: none"> <li>• Walk Against Warming marches are held around Australia</li> <li>• The IPCC Synthesis Report is released</li> <li>• The federal election is won by Labor led by Kevin Rudd</li> <li>• Climate change is on the agenda at the CHOGM summit in Uganda</li> <li>• The new federal government ratifies the Kyoto Protocol</li> </ul>
DECEMBER	<ul style="list-style-type: none"> <li>• COP 13 is held in Bali</li> <li>• Prime Minister Rudd rejects non-binding international targets</li> <li>• The Bali Roadmap is released</li> </ul>

Many media texts were not triggered by a specific event, but by scientific, activist, sceptic, business and political activities and issues more generally. A process that featured prominently in the climate change debate in Australia during the first half of 2007 was the Prime Ministerial Task Group on Emissions Trading which generated hundreds of submissions from individuals, businesses, and non-government organisations. While climate change was high on the political agenda throughout 2007, the second half of the year saw a dramatic increase in political activity in the lead-up to the federal election in November. Issues and themes that dominated the climate change debate in 2007 included:

- A growing awareness that climate change is happening and is serious;
- Concern about the impacts of climate change on Australia, particularly in relation to the availability of water and the impact on the Great Barrier Reef;
- Which political party offered a more appropriate response to climate change;
- What form emissions trading should take, and when it should be implemented;
- Whether nuclear power should play a role in addressing climate change in Australia;
- What role carbon capture and storage can and/or should play in reducing emissions in Australia and overseas; and,
- What role Australia should play in relation to international action on climate change.

#### **6.4 THE ACTORS PRODUCING AND REPRESENTED IN TEXTS**

A wide range of actors produced and were represented in the texts collected. The key actors associated with each discourse will be discussed in Chapter 7 and Chapter 8. However, this section will provide a brief overview of the actors producing and represented in the media texts collected as a whole. As one would expect, the vast majority of these were authored by journalists. Interestingly, out of a total of 343 journalists writing and broadcasting about climate change in 2007, just 55 produced over 50% of the 1465 texts published, and just 15 authored more than 30%. Particularly prolific journalists included:

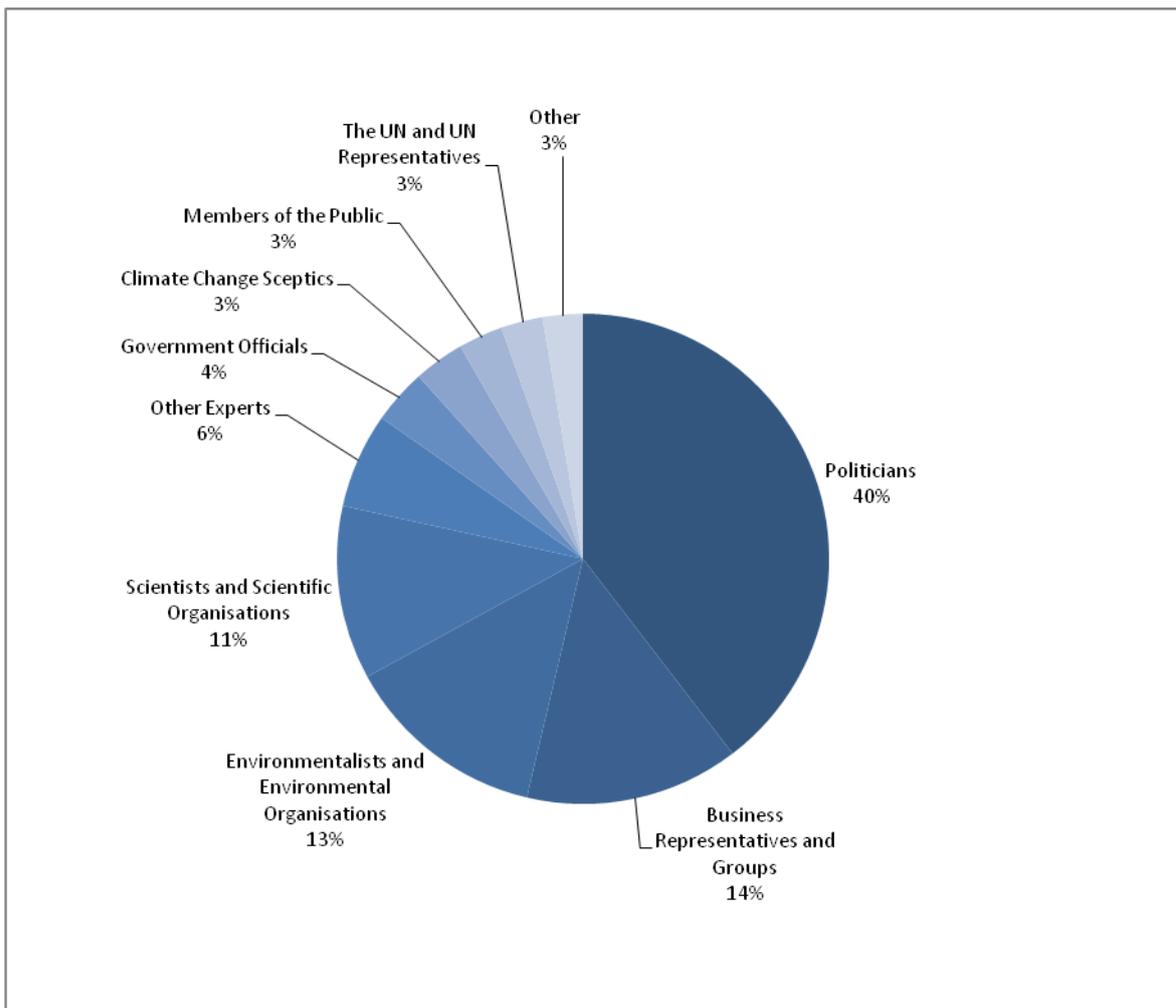
- Matthew Warren, *Australian* environment reporter;
- Denis Shanahan, *Australian* political editor;
- Peter Hannam, *Age* deputy business editor;
- Liz Minchin, *Age* environment reporter;

- Matthew Murphy, *Age* energy reporter;
- Katherine Murphy, *Age* reporter;
- Leon Gettler, *Age* columnist and management reporter;
- Michelle Grattan, *Age* political editor;
- Tony Colebatch, *Age* economics editor; and,
- Tony Jones *Lateline* anchor.

As discussed in Section 6.1.2, a range of other actors also produced media texts in the form of opinion pieces, speech and book extracts, and as interviewees on *The 7.30 Report* and *Lateline*. Altogether these actors produced about 12% of the media texts in 2007, including:

- 22 by scientists and other academics;
- 39 by activists;
- 22 by sceptics;
- 29 by business representatives; and,
- 33 by politicians.

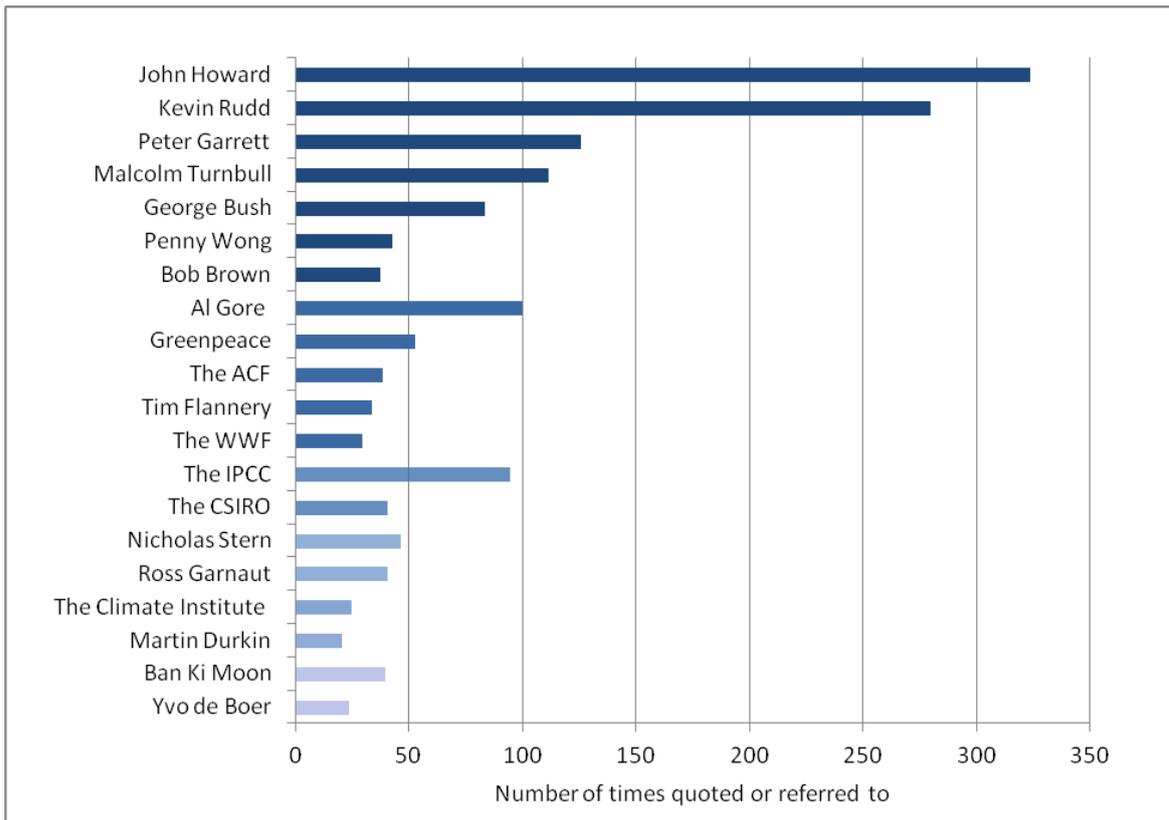
The number of actors quoted and referred to within the media was of course much larger, encompassing a diverse range of different types of actors. Politicians were by far the most dominant actors in the climate change debate in 2007, accounting for 40% of the actors quoted and referred in the media texts collected, as shown in Figure 6.5. Businesses, business representatives and business groups were next (14%), followed by environmentalists and environmental organisations (13%), scientists and scientific organisations (11%), and other academics, experts and research organisations (6%). Government officials represented 4% of the actors quoted and referred to, while climate change sceptics and sceptic groups, members of the public, and the UN and UN representatives each constituted 3%. Finally, a range of actors that did not fit into any of the categories described above, including celebrities, religious leaders and groups, and other non-government organisations, accounted for the remaining 3%.



**Figure 6.5 Types of actors quoted and referred to in relation to climate change in the media during 2007.**

Within each of the categories outlined above, a number of key individuals and groups were particularly prominent. For example, while a wide range of local, state, national and international politicians were quoted and referred to, just seven individuals accounted for 68% of these quotes and references. In particular, the then Prime Minister John Howard was quoted and/or referred to 323 times, and the then Opposition Leader (and Prime Minister from December 2007) Kevin Rudd 279 times, as shown in Figure 6.6. Other prominent political actors included Malcolm Turnbull (Minister for the Environment from January to December 2007), Peter Garrett (Shadow Minister for the Environment from December 2006 and Minister for the Environment from December 2007), Penny Wong (Minister for Climate Change and Water<sup>44</sup> from December 2007), Bob Brown (then leader of the Greens), and the then US President George Bush.

<sup>44</sup> Climate Change and Water was a new ministry created by Rudd following Labor's election win.



**Figure 6.6 The 20 most quoted and referred to actors in relation to climate change in the media during 2007.**

While collectively businesses, business representatives or business groups were the second most quoted and referred to actors, it is interesting to observe that no individual business representatives or groups were particularly prominent, with most business actors featuring fewer than ten times over the course of 2007. By far the most prominent environmentalist during 2007 was Al Gore, who was quoted and/or referred to 99 times, followed by Tim Flannery. Greenpeace was the most prominent environmental organisation (quoted and/or referred to 52 times), followed by the Australian Conservation Foundation (ACF) and the World Wide Fund for Nature (WWF). The IPCC was the most prominent scientific organisation (quoted and/or referred to 94 times), followed by the Commonwealth Scientific and Industrial Research Organisation (CSIRO), with no individual scientists quoted or referred to more than ten times.

British economist and the author of *The Stern Review*, Nicholas Stern was quoted and/or referred to 46 times, with his Australian counterpart Ross Garnaut close behind, and the Climate Institute the most prominent think-tank (quoted and/or referred to 24 times). Documentary maker and creator of *The Great Global Warming Swindle* Martin Durkin was

the most climate change sceptic (quoted and/or referred to 20 times). The United Nations Secretary General Ban Ki-moon made many widely publicised statements on climate change during 2007, and was quoted and/or referred to 39 times. The then Executive Secretary of the UNFCCC Yvo de Boer completes the list of the twenty most prominent actors within the climate change debate during 2007.

## **CONCLUSION**

This chapter has provided an overview of the climate change debate in Australia during 2007. The year saw the production and dissemination of an unprecedented number of media texts about climate change, including many front page stories, feature stories, columns, editorials, and television news items and interviews. This dramatic increase in media coverage was matched by a marked increase in political texts about climate change during 2007, including 102 references to the issue in parliamentary Hansard. A wide range of material produced by international institutions, environmental organisations, industry associations and other groups further contributed to the rich and varied source of written visual and spoken texts available to be examined in order to identify and characterise the discourses shaping the climate change debate in Australia.

The year 2007 was very eventful in terms of processes and events relating to climate change. These included the publication of the IPCC's Fourth Assessment Report, and a series of high profile international conferences about climate change including the G8 Summit in Germany in June, the APEC Summit in Sydney in September, and the UN conference in Bali in December. Locally, climate change featured prominently in the political arena, and a wide range of events kept the issue in the media throughout 2007.

Many different actors produced and were represented in the texts collected. It was found that politicians were the dominant actors within the climate change debate in 2007, followed by businesses and business representatives, environmentalists and environmental organisations, then scientists and scientific organisations. These actors and their participation in the climate change debate will be discussed in more detail in Chapters 7 and 8. Quotes from these actors will be used to develop an understanding of the discourses of climate change activism and scepticism, and in Chapter 9, the construction of options for addressing climate change.

## Chapter 7: The Discourse of Climate Change Activism

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### INTRODUCTION

Together with Chapter 8, this Chapter uses the analytic framework developed in Chapter 5 to address the first two research questions posed by this thesis. Firstly, what are the key discourses informing and emanating from the climate change debate in Australia? And secondly, how do these discourses construct the issue of climate change?

Since the early 1990s many individuals and groups have articulated a shared discourse of concern about climate change risks, and the need to take responsibility to prevent harm to vulnerable communities, the non-human world, and future generations (Bulkeley 2001a:443). This chapter will present a comprehensive overview of this discourse as it manifested in the Australian climate change debate during 2007.

Section 7.1 will explore the five main arguments and messages underpinning the discourse of climate change activism, as summarised in Table 7.1. These arguments and messages were promoted by a wide range of actors, and Section 7.2 will identify the scientists, scientific organisations, environmentalists, environmental organisations, journalists, businesses, business representatives, and other public figures sustaining the discourse of climate change activism.

Section 7.3 will then explore the unique linguistic and rhetorical characteristics of the discourse of climate change activism, while Section 7.4 will focus on the positional and relational discursive strategies used to frame actors as the victims, villains and heroes within the climate change debate. Finally, Section 7.5 will identify the key ways in which the discourse of climate change activism constructed climate change, including climate change as one of many environmental problems that need to be addressed, an economic imperative, an opportunity, a moral issue and a crisis of unprecedented scale and severity. Examples of written, spoken and visual texts are used throughout to illustrate key dimensions of the discourse.

**Table 7.1 Climate change activism discourse matrix**

<p>Main Arguments and Messages</p>	<ul style="list-style-type: none"> <li>• Climate change is happening</li> <li>• Climate change is serious</li> <li>• Current responses to climate change are inadequate</li> <li>• Urgent action is needed to address climate change</li> <li>• Addressing climate change is achievable and affordable</li> </ul>
<p>Actors and their Motives</p>	<ul style="list-style-type: none"> <li>• Scientists and scientific organisations</li> <li>• Environmentalists and environmental organisations</li> <li>• Some journalists</li> <li>• Some businesses and business representatives</li> <li>• Other public figures and members of the public</li> </ul>
<p>Key Linguistic and Rhetorical Characteristics</p>	<ul style="list-style-type: none"> <li>• Dry and cautious language</li> <li>• A dire lexicon</li> <li>• Illness metaphors</li> <li>• War analogies</li> <li>• Satire</li> <li>• New words and phrases</li> </ul>
<p>Discursive Strategies</p>	<ul style="list-style-type: none"> <li>• Framing poor countries, poor people and future generations as victims of climate change</li> <li>• Framing energy intensive countries, companies, consumers and climate sceptics as villains</li> <li>• Framing countries, companies, communities and individuals trying to reduce their emissions as heroes</li> </ul>
<p>Key Constructions</p>	<ul style="list-style-type: none"> <li>• One of many environmental issues that need to be addressed</li> <li>• An economic imperative</li> <li>• An opportunity</li> <li>• A moral issue</li> <li>• A crisis of unprecedented scale</li> </ul>

## 7.1 THE MAIN ARGUMENTS AND MESSAGES

Five main arguments formed the basis of the discourse of climate change activism, as shown in Table 7.1. Each of these will be discussed below.

### 7.1.1 Climate Change is Happening

The discourse of climate change activism was underpinned by a widespread consensus within the scientific community that climate change is happening. Each successive Intergovernmental Panel on Climate Change (IPCC) report has been more confident about the evidence supporting this argument, with the Fourth Assessment Report published in 2007 asserting that:

Warming of the climate system is unequivocal, as is now evident from observations of increases in global average air and ocean temperatures, widespread melting of snow and ice, and rising global average sea level (IPCC 2007a:237).

A key message associated with this argument was that humans are causing climate change:

Most of the observed increasing in global average temperatures since the mid-20th century is very likely due to the observed increase in anthropogenic GHG concentrations. It is likely that there has been significant anthropogenic warming over the past 50 years averaged over each continent (except Antarctica)... Advances since the TAR<sup>45</sup> show that discernible human influences extend beyond average temperature to other aspects of climate<sup>46</sup> (IPCC 2007c:5-6).

By 2007 this was widely accepted by the scientific community. Paul Fraser, chief research scientist with CSIRO Marine and Atmospheric Research, argued that:

As a researcher in the field for more than 30 years, I am not aware of a single peer-reviewed paper or review, in a quality atmospheric science journal, that relates the temperature changes over this period to only natural causes (Fraser 5 February 2007).

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<sup>45</sup> The IPCC's Third Assessment Report, published in 2001.

<sup>46</sup> Including sea level rise, changes in wind patterns affecting extra-tropical storm tracks and temperature patterns, increased temperatures of extreme hot and cold days and nights, increased risk of heat waves, the area affected by drought since the 1920s and the frequency of heavy precipitation events (IPCC 2007c:6).

Supporting this anecdotal evidence, a study by Oreskes (2004) examined 928 peer-reviewed scientific journal articles published between 1993 and 2003 and found that none disagreed with the prevailing consensus that humans are causing climate change. Another message embedded within this argument was that climate change is already impacting on natural and human systems:

Observational evidence from all continents and most oceans shows that many natural systems are being affected by regional climate changes, particularly temperature increases (IPCC 2007c:2).

Impacts are already evident, and changes in water availability, food security and sea level rises are projected to dramatically affect many millions of people (UNEP 2007:14).

A third key message associated with this argument was that science may be underestimating the impact of climate change and that climate change is happening more rapidly than predicted. For example, Pearman argued that “the latest scientific literature indicates that the rates of climate change are larger than we had thought” (Pearman 2 June 2007), while Pittock argued:

Climate change is happening now, faster than expected by most scientists, and indeed by the IPCC since its fourth assessment report was finalised this year... The IPCC estimates were low, largely due to a tendency to focus on the middle or “most likely” estimates of possibilities rather than on the more extreme possibilities that would have far worse effects (Pittock 20 November 2007).

Similarly, Lucas asserted that “there is certainly the possibility that even the latest global models for climate change have been far too conservative” (Lucas on *The 7.30 Report* 26 September 2007). It was also argued that even if immediate action is taken to address climate change, some detrimental impacts are unavoidable:

The amount of warming built into the system is now great enough that we’ll just keep setting records...We are stuck with substantial warming over the next couple of decades (Nicholls in Minchin 11 August 2007).

Anthropogenic warming and sea level rise will continue for centuries due to the time scales associated with climate processes and feedbacks, even if greenhouse gas concentrations were to be stabilised (IPCC 2007c:12).

### 7.1.2 Climate Change is Serious

The second main argument characterising the discourse of climate change activism was that climate change has serious consequences for society and the environment. The IPCC's Fourth Assessment Report argued that:

Altered frequencies and intensities of extreme weather, together with sea level rise, are expected to have mostly adverse effects on natural and human systems (IPCC 2007c:12).

The IPCC identified risks to threatened species, the distribution of impacts and vulnerabilities, and aggregate impacts as further "reasons for concern" (IPCC 2007c:19). The discourse of climate change activism emphasised the urgency associated with these concerns:

No other challenge comes closer in its urgency to be tackled than climate change. The consequences of climate change affect life as we know it for every living thing: from polar bears to coral reefs, from the South Pacific islanders to the forests (*The Age* 5 June 2007).

The indications of how many people are at risk is still quite difficult to determine, but they, for water and food, they're at least in the order of tens to a hundred million people that could be exposed. From a water point of view, the estimates are more like up to billions of people (Pearman on *The 7.30 Report* 2 February 2007).

A key message related to this argument was that developing countries are likely to be worst affected. For example, Philip Freier, the Anglican Archbishop of Melbourne argued:

It is shameful that half the world's population – about 3 billion people – subsist on less than \$US2 (\$A2.30) a day. The cost to these people of dealing with global warming will be high. The cost of not dealing with it will be even higher, as extreme weather events, changed climatic conditions and the like wreak havoc on their food production and livelihoods (Freier 26 June 2007).

While the Executive Director of Oxfam Australia, Andrew Hewitt argued that:

The world's poor are already suffering from increased environmental and human disasters leading to food and water shortages, poor health, increases in poverty and instability. If we fail to act we risk this further (Hewitt 5 December 2007).

Another message embedded within the argument that climate change is serious was that it exacerbates a range of existing anthropogenic impacts<sup>47</sup>, contributing to a range of other environmental and social problems (e.g. Hannan and McNicoll 9 July 2007; Dayton 5 September 2007; Coyne and Hoekstra 10 November 2007; Roberts 8 December 2007). Norman argued that:

There are many aspects of global warming that we have barely begun to understand – such as its potential to exacerbate already existing social inequity on both the local and international level (Norman 26 March 2007).

While Gore insisted:

We must understand the connections between the climate crisis and the afflictions of poverty, hunger, HIV/AIDS and other pandemics. As these problems are linked, so too must be their solutions (Gore 12 December 2007).

### **7.1.3 Current Responses to Climate Change are Inadequate**

The third argument underpinning the discourse of climate change activism was that responses to climate change have so far been inadequate. UNEP's Fourth Global Environmental Outlook Report which was released in 2007, asserted that "to prevent future severe impacts from climate change drastic steps are necessary to reduce emissions" but argues that "there has been a remarkable lack of urgency in tackling greenhouse gas emissions" and a "woefully inadequate" global response (UNEP 2007:40,60). Pearman also noted the "disconnect" between the level of urgency understood by scientists and the action of governments so far. "You have to recognise the urgency, and it doesn't seem to be there. We really need to scale up the efforts nationally and internationally" (Pearman in Chandler 27 October 2007). Pittock agreed, arguing "we are suffering from a lack of a necessary sense of urgency regarding the needed reduction in greenhouse gas emissions".

It was argued that Australia's domestic climate change policy is seriously inadequate and during 2007 the discourse of climate change activism was highly critical of both the government and the opposition's climate change policies. For example, Flannery argued that "neither party has formulated policy that is going to be meaningful" (Flannery in

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<sup>47</sup> Including land degradation, soil erosion, deforestation, habitat destruction, overfishing, air and water pollution, oil spills, introduced species and biodiversity loss.

Gordon 10 February 2007). Similarly, *The Age* ran a series of editorials arguing that both parties' election promises about climate change were inadequate:

The environmental imperatives from the two main party leaders have been as purposeless as tumbleweeds – largely insubstantial and inconsequential, tossed hither and thither by heated rhetoric. Meanwhile, in the real world, the realities of climate change continue their inexorable, inevitable path (*The Age* 24 October 2007).

It's not good enough that neither side will disclose interim emissions targets or go beyond modest energy demand management measures (*The Age* 30 October 2007).

Environmental groups were equally scathing with Don Henry, the executive director of the Australian Conservation Foundation asserting that:

While Labor has committed to ratify the Kyoto Protocol and the Coalition hasn't, in total the major parties are failing on climate change and the environment. We are hearing a lot of talk and not seeing enough action on climate change from both major parties (Henry in *The Age* 18 October 2007).

#### **7.1.4 Urgent Action is Needed to Address Climate Change**

Fundamental to the discourse of climate change activism was the argument that urgent action is needed to address climate change. All climate change activists agreed that significant reductions in greenhouse gas emissions are crucial to avoid the worst impacts of climate change and that action needs to be taken to adapt to climatic changes that are unavoidable. For example, *The Age* (17 December 2007) asserted that “The weight of scientific evidence presents a compelling and urgent case for swift and decisive action”, while Rowley argued that:

Given the scale of the environmental, economic, societal and security risks associated with continued emissions growth, continued global warming and the uncertain, potentially catastrophic climate effects of that warming, the need for urgency is paramount (Rowley 16 November 2007)

Rowley (16 November 2007) added that “any response must be directed by a clear, science based target”. However, this is one area in which the IPCC tends to be reticent, and the Fourth Assessment Report did not provide a clear statement about how much emissions need to be cut by (England quoted in Fitzpatrick 7 December 2007). There was wide variation in how much activists argued emissions need to be reduced by. Proposed targets

ranged from least 30% below 1990 levels by 2050 (e.g. Stern on *Lateline* 28 March 2007b), to at least 50% by 2050 (e.g. Gore 2 July 2007), to at least 60% by 2050 (Dunlop 23 October 2007), to 80-85% by 2050 (e.g. Christoff 27 November 2007).

In this context, activists argued that individuals, communities, and countries all have a crucial role to play:

Government, businesses and individuals must all make significant changes to their daily activities. Ultimately, this is the only way to protect the quality of our way of life (*The Age* 3 February 2007).

The discourse of climate change activism also insists that international cooperation and collective action is vital. For example Gore argued:

Too many proposals fall short of the strong, decisive action that's needed. Individual nations alone cannot solve this crisis. The nations of the world must join together as one if we are to succeed (Gore in Davies 5 July 2007).

Similarly, Raupach declared:

The global community has to share the burden of fighting climate... Everyone, and every nation must participate in the solutions... The only way out is for all contributors to accept a responsibility related to their contribution to the problem (Raupach 25 June 2007).

Here Raupach drew attention to another message embedded within this argument, that different countries have contributed to climate change to differing degrees and have differing levels of responsibility to address it. Davidson explained:

The developed world, which for the most part began industrialisation over a century ago, is responsible for 80% of greenhouse gases in the atmosphere. Per capita, greenhouse gases in the US (and Australia) are seven times higher, and the European emissions three times higher, than China's (Davidson 17 December 2007).

It was therefore argued that developed countries need to take the lead in addressing climate change: "It is up to the rich countries that build their prosperity on burning fossil fuels to lead the way by committing to urgent action" (Pittock 20 November 2007).

The final message associated with this argument was that there is a very limited time in which we can avert the worst impacts of climate change. For example Davidson (7 June 2007) asserted that: “The scientific consensus is that another decade of business as usual runs the risk that we will have irreversible and catastrophic climate change” giving us only a “brief window of opportunity to act”. He concluded that “the scarcest resource humanity has is time” (Davidson 17 December 2007). Hewett agreed that:

What’s needed now is swift action. The world’s leading climate change scientists have raised the alarm and the message is simple: the world has only a decade to reverse the worst effects of climate change (Hewett 5 December 2007).

Henry argued “We have maybe seven or eight years to get on top of this” (in Chandler 27 October 2007), while others emphasised the need for *immediate* action. For example, Christoff argued that “when it comes to tackling global warming, leadership over the next 12 months is critical” (Christoff 27 November 2007), while Flannery insisted that action to address climate change is required “this year, not next” (Flannery 4 October 2007).

### **7.1.5 Addressing Climate Change is Achievable and Affordable**

Finally, the discourse of climate change activism was characterised by a sense of optimism and the argument that it *is* possible to address climate change. For example, during a trip to Antarctica to view the impacts of climate change on the continent, Ban Ki-moon declared: “If the international community does something now, we will be able to prevent a further progress of the global warming” (in *The Australian* 12 November 2007). Similarly, Gore (12 December 2007) argued that “We have the ability to solve this crisis and avoid the worst – though not all – of its consequences, if we act boldly, decisively and quickly”, while Low asserted that:

The necessary reduction in emissions can be achieved without the development of dramatic new technologies, but rather by a mixture of current and well-known technologies, and some changes in human behaviour (Low 30 March 2007).

There was widespread agreement that there is “substantial economic potential of the mitigation of global greenhouse gas emissions” (IPCC 2007c:14). Raupach conceded that “cutting emissions won’t be easy,” but argued that “we know that we have solutions

available to us” and that “it can be done at a relatively small cost to the economy” (in Minchin 22 May 2007). Similarly, Brook insisted that:

The costs involved in moving fast to address the emissions problem are incredibly small, or perhaps even beneficial overall, and that’s before we count the social and environmental cost of not taking action (Brook in Mitchell 19 November 2007).

In this context, it was argued that there isn’t a dichotomy between addressing climate change and pursuing and maintaining economic prosperity. Stern argued that “There is no horse race between energy security, climate change responsibility and growth. We can have them together” (Stern on *Lateline* 28 March 2007a). In relation to calls to reduce greenhouse gas emissions by 30% by 2050 he added:

I believe that the costs of doing this in most rich countries would be of the order of one or two percent of GDP and I think that’s not devastating. I think that’s the kind of change that we can cope with as a rich world (Stern on *Lateline* 28 March 2007b).

In its submission to the Prime Ministerial Emissions Trading Task Group, the CSIRO argued that cutting greenhouse gas emissions by between 60 and 90% by 2050 is affordable and achievable, citing studies that showed that rapid reductions would only slightly slow Australia’s and the world’s economic growth, with Australia’s economy expected to more than double by 2040 either way (Minchin and Tomazin 25 April 2007). Others emphasised that taking action to address climate change will be far less costly than inaction. Leader of the Greens Party, Senator Bob Brown argued that the effect of unchecked climate change would be devastating across the economy, and that under global warming inflation “will be far worse because of the cost of adjustment to a heating and drying world, with food prices soaring and job losses in agriculture, tourism and other industries”. He added that:

Predictions are 95% chance destruction of the barrier reef by 2050. That’s a multi-billion tourism industry<sup>48</sup> with 33 000 jobs – more than the whole of the Australian coal mining industry (Brown in Kerr and Warren 15 February 2007).

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<sup>48</sup> The WWF estimates that the Great Barrier Reef contributes \$5.8 billion to the economy (Murphy 13 July 2007).

Another message associated with this argument was that addressing climate change provides both benefits and opportunities: “We could make large net gains from being ahead of the game in greenhouse mitigation instead of being a reluctant follower” (Jutsen 5 April 2007). Davidson agreed:

Australia should be planning to introduce the highest environmental standards in the world. By meeting those standards, Australian industry would develop the edge in global markets. Instead we are losing the edge we have had in wind and solar technology as Australian expertise shifts off-shore due to the federal government’s failure to increase mandatory renewable energy targets (Davidson 7 June 2007).

Internationally, The US Climate Action Partnership (USCAP<sup>49</sup>) said that the climate change “challenge” offers more opportunities than risk for the US economy, such as the creation of 5 million jobs in the renewable energy industry (USCAP in *The Australian* 8 December 2007). At the same time, others emphasised the co-benefits for individuals and households reducing their emissions, particularly the potential to save money by reducing energy and water usage (e.g. Minchin 15 June 2007).

## **7.2 ACTORS AND THEIR MOTIVES**

The arguments and messages described above were promoted by a wide range of actors including scientists and scientific organisations, environmentalists and environmental organisations, journalists, businesses and business representatives, other public figures and members of the public.

### **7.2.1 Scientists and Scientific Organisations**

Scientists and scientific organisations have played a significant role in developing and communicating the discourse of climate change activism. The IPCC was the single most quoted and referred to organisation within the climate change debate in Australia during 2007. As discussed in Chapter 2, the IPCC was established in 1988 to assess the available information on the scientific basis of climate change, its potential impacts and the options for mitigation and adaptation. Hundreds of authors contributed to its Fourth Assessment

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<sup>49</sup> USCAP consists of 33 members including S&P Index-listed companies such as Ford and General Electric. During 2007 these companies committed to reducing their emissions by 90% of 1990 levels by 2050, with a 45% reduction in emissions by 2020 as an interim target (*The Australian* 8 December 2007).

Report which cited thousands of scientific studies. At a series of meetings during 2007 the summaries for policy makers that preface each volume were subject to line-by-line approval by representatives from 130 countries. This led to allegations of delegates ‘watering down’ controversial statements (e.g. Burton in Dayton 7 April 2007; WWF in Clover 14 November 2007). This is of particular concern, as these summaries are used by policy makers at all levels of government as well as informing the conference of the parties to the United Nations Framework Convention on Climate Change (UNFCCC). However, for the most part the IPCC is apolitical, in that it does not advocate particular policies or emission reduction targets (Forbes 7 December 2007).

Domestically, the Commonwealth Scientific and Industry Research Organisation (CSIRO) was the most influential scientific organisation within the climate change debate during 2007. As discussed in Chapter 4, the CSIRO played a significant role in raising awareness about climate change during the 1980s, and the organisation has continued to actively promote concern about climate change, regularly holding conferences and releasing publications about climate change (e.g. CSIRO 1989; 1999; 2007; 2011). The CSIRO has a strong reputation for its research into climate change and related issues, variously described as “one of the nation’s most respected scientific organisations” (Nicholson 6 October 2007), and “one of the world’s leading research agencies examining climate change” (Hamilton 2007:26). However, during the late 1990s and early 2000s, climate change scientists at the CSIRO came under increasing pressure from both industry partners and the government to censor public statements about the climate change impacts and policy implications:

The chief of CSIRO’s Energy Technology division acknowledged before a senate committee that it was “not necessarily unusual” for research commissioned as part of government-industry collaboration to be suppressed if the findings were deemed not to be in the best interests of the industry partner (Pearse 2007:225).

In 2006, *Four Corners* reported that senior climate change scientists “have been repeatedly gagged at CSIRO as part of an official policy that prevented them from commenting publicly on the implications of their research for policy” (*Four Corners* 13 February 2006). Graeme Pearman, former head of Atmospheric Research at the CSIRO, stated that he was told by management on at least half-a-dozen occasions not to speak about the need to reduce greenhouse gas emissions (Hamilton 2007:13). Barrie Pittock, former head of the

CSIRO Climate Impacts Group, was also asked by management to reword government documents to remove references to emission reductions and environmental refugees at the request of the Department of Foreign Affairs and Trade (Pearse 2007:225-6).

Many Australian scientists have played a prominent role in the development of climate change science, with 133 participating in the IPCC process as contributors and reviewers of the Fourth Assessment Report. Boykoff (2008b:16) observes that “climate scientists are often reluctant to interact with the media, leaving sourcing for stories to other communities for interpretation”, and sometimes leading to inaccurate amplification of uncertainty about important aspects of the subject. However, a significant number of Australian scientists actively participated in the public debate about climate change through writing opinion pieces, being interviewed for newspaper articles and television programs and publishing books. The most prominent of these during 2007 were Graeme Pearman and Geoff Love (the then head of the Australian Bureau of Meteorology), both IPCC contributors. Other Australian scientists who actively participated in the climate change debate during 2007 included:

- Barry Brook, director of Climate Science at the University of Adelaide’s Environment Institute;
- Matthew England, co-director of the Climate Change Research Centre at the University of New South Wales<sup>50</sup>;
- Chris Lucas, from the Centre for Australian Weather and Climate Research at the Bureau of Meteorology;
- Tony McMichael, then director of the National Centre for Epidemiology and Population Health at ANU;
- Neville Nicholls, professorial fellow at the School of Geography and Environmental Science at Monash University<sup>49</sup>; and
- Michael Raupach, from Marine and Atmospheric Research at the CSIRO, and a co-chairman of the Global Carbon Project.

Several international scientists played an important role disseminating the discourse of climate change activism in Australia during 2007, particularly:

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<sup>50</sup> Also an IPCC contributor.

- James Hansen, from the Goddard Institute for Space Studies in the United States<sup>49</sup>;
- Rajendra Pachauri, the then Chairman of the IPCC; and
- Stephen Schneider, then a professor for interdisciplinary environmental studies at Stanford University<sup>49</sup>.

## 7.2.2 Environmentalists and Environmental Organisations

The most quoted and referred to climate change activist in the Australian media during 2007 was former US vice-president Al Gore<sup>51</sup>. Gore's film *An Inconvenient Truth*, which screened in Australian cinemas during 2006, was referred to in the media throughout 2007. Gore visited Australia twice during 2007, holding workshops in conjunction with the Australian Conservation Foundation (ACF) to train members of the public to deliver presentations on climate change to the community. Gore was also heavily involved in the *Live Earth* concerts which took place in July 2007, and launched *Save our Selves – the Campaign for a Climate in Crisis* to mobilise people around the world to take action (Ziffer and Donovan 17 February 2007). In October 2007 Gore together with the IPCC received a Nobel Peace Prize for their “efforts to build up and disseminate greater knowledge about manmade [*sic*] climate change”. The Nobel Prize committee declared that Mr Gore was “probably the single individual who has done most to create greater worldwide understanding of the measures that need to be adopted to tackle climate change” (Nobel Foundation 2007).

The next most prominent climate change activists were Tim Flannery and Don Henry. A palaeontologist by training, Tim Flannery has published many scientific papers and books about a range of subjects. He has also developed a strong reputation as an advocate for the environment. In 2005 he published *The Weather Makers: the History and Future Impact of Climate Change*, which has been translated into more than 20 languages. In January 2007, he received the Australian of the Year Award for his work as a “scientist, writer and thinker” (Australian of the Year Award 2012). He later caused controversy by suggesting that he might hand back the award because he was “torn between speaking out about climate change and remaining politically neutral” (Flannery in Minchin and Tomazin 25 April 2007). Don Henry became the executive director (later CEO) of the ACF in 1998.

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<sup>51</sup> Al Gore was quoted and/or referred to 99 times in the media texts collected, second only to four key Australian politicians (John Howard, Kevin Rudd, Peter Garrett and Malcolm Turnbull).

Since then he has been a vocal spokesperson for the organisation, and he was an active participant in the climate change debate throughout 2007. Other prominent environmentalists in the climate change debate during 2007 included:

- Ian Lowe, president of the ACF;
- Peter Christoff, vice-president of the ACF;
- James Norman, communications advisor with the ACF;
- John Connor, CEO of the Climate Institute;
- Erwin Jackson, deputy CEO of the Climate Institute;
- Stephen Campbell, head of campaigns with Greenpeace;
- Ben Pearson, then climate change campaigner with Greenpeace;
- Mark Wakeham, then energy campaigner with Greenpeace; and
- Greg Bourne, then president of the WWF.

Environmental organisations played a fundamental role in the discourse of climate change activism, raising public awareness about climate change and pressuring politicians to take action. The most quoted and referred to environmental group in 2007 was Greenpeace, which has been actively campaigning about climate change since the 1980s, and published its first comprehensive report on global warming in 1990 (Leggett 1990; Brown and May 1991). As well as commenting about climate change in the media, Greenpeace activists undertook several protests involving peaceful civil disobedience during 2007, including chaining themselves to two conveyor belts at the Loy Yang power Station in New South Wales (Murphy 4 September), and penetrating the security cordon at the G8 summit in Germany to unfurl a “G8 Act Now” banner near the resort where the G8 leaders met (*The Australian* 9 June 2007). Other environmental groups active in the climate change debate in 2007 were the ACF, the World Wide Fund for Nature (WWF), the Friends of the Earth (FoE), and the Wilderness Society.

In addition to these pre-existing environmental organisations, a number of groups specifically focused on the issue of climate change emerged during the mid 2000s. A wide variety of community based groups sprang up around Australia as part of “a resurgence of environmental activism in suburbs and towns across Australia, spurred by concerns about climate change” (*The Age* 14 June 2007). At the same time, a number of national and international networks were formed including the Climate Action Network, and the

Alliance for Climate Protection. These provided frameworks for environmental, social and business organisations to come together on the issue of climate change. For example, the Equity in Response to Climate Change Roundtable created a partnership between environment and welfare groups, the ACF, the Climate Institute, the Brotherhood of St Laurence, and the National Welfare Rights Network, “to put the spotlight on how low-income and disadvantaged people will be on the front line of climate change impacts” (Norman 26 March 2007).

### **7.2.3 Journalists**

As well as playing a vital role in communicating the discourse of climate change activism, a number of journalists actively contributed to the development and dissemination of the discourse themselves. As observed in Section 6.1.2, *The Age* ran 16 editorials emphasising the seriousness of climate change and the need for greater action to reduce emissions during 2007, making *The Age* an active participant in the discourse of climate change activism. These editorials were supported by the work of several *Age* journalists, particularly economics editor Tony Colebatch, columnist Kenneth Davidson, deputy business editor Peter Hannam, and reporters Jo Chandler, Rachel Kleinman, Liz Minchin, Katherine Murphy and Matthew Murphy. On the ABC, both *The 7.30 Report* and *Lateline* promoted an activist agenda, with *Lateline* anchor Tony Jones a notable proponent through his interviews of key political actors. *The Australian* had far fewer activist journalists, with Leigh Dayton the only reporter consistently promoting the discourse.

### **7.2.4 Businesses and Business Representatives**

As discussed in Chapter 4, the mid to late 2000s saw the increasing participation of the business sector in the discourse of climate change activism. On March 30 2007, more than 2000 businesses participated in Earth Hour in Sydney (Sprothen 14 May 2007). Many high profile companies also made widely publicised commitments to reduce their greenhouse gas emissions during 2007. For example, BP committed to cutting its emissions by 10% by 2010, while Alcoa announced that it would reduce its emissions by 25% by 2010 (Henry 21 June 2007). News Corporation (the publisher of *The Australian*) committed to becoming carbon-neutral by 2010 (Dearne 15 May 2007). The National Australia Bank also announced that it would become carbon neutral within three years (Weekes 8 April

2007), while the Australian unit of the global financial services company KPMG, committed to become carbon neutral by mid 2008 (Hannam 16 April 2007). In March 2007, Australia's largest energy company, AGL joined the Chicago Climate Exchange, the world's first voluntary and legally binding program for trading greenhouse gas emissions (Murphy 20 March 2007). Origin, Australia's second largest energy company established a de facto trading scheme providing local businesses with a standard method of buying and selling verified carbon offsets (Hannam 19 March 2007). The year 2007 also saw the advent of a number of new companies selling 'green power' and carbon offsets to consumers (e.g. Todd 7 May 2007).

As noted in Section 6.1.4, although some business representatives spoke about climate change in the media, few did so regularly. There were some exceptions however. For example, British entrepreneur and owner of Virgin Airlines, Richard Branson, made several statements relating to climate change during 2007, including announcing that he would be investing 100% of the profits from his airline over the next 10 years "into research to attempt to come up with clean fuels for planes, cars, buses, trucks, etc." (Branson 24 May 2007). He also offered a \$US25 million prize for a commercially viable means of removing carbon dioxide from the air (Gettler 12 May 2007). Another vocal business representative within the discourse of climate change activism during 2007 was Ian Dunlop, formerly an oil, gas and coal industry executive, CEO of the Australian Institute of Company Directors from 1997-2001, and more recently, the deputy convenor of the Australian Association for the Study of Peak Oil. Nick Rowley, then a director of Kinesis, a company working with clients to measure and reduce their emissions, also made several contributions to the discourse of climate change activism, as did Fiona Wain, then CEO of Environment Business Australia (now Sustainable Business Australia), a peak body for the low carbon and environmental goods and services sector.

### **7.2.5 Other Public Figures and Members of the Public**

A wide range of other public figures also participated in the discourse of climate change activism. Throughout 2007, the then Opposition Leader Kevin Rudd together with then Shadow Minister for Environment and Water Peter Garrett argued that the Howard Government's response to climate change was inadequate and that more significant action was required. The then leader of the Greens Bob Brown and then Green's spokesperson for

climate change Christine Milne argued that both the government's and the opposition's climate change policies were inadequate. During the federal election, candidates from the newly formed Climate Change Coalition Party, including prominent scientist and broadcaster, Karl Kruszelnicki, ran for parliament on a platform emphasising the central importance of addressing climate change (Doherty 28 September).

At the international level, the UN Secretary General Ban Ki-moon declared his efforts to focus attention on fighting climate change one of his "main priorities as secretary general" (Ki-moon in *The Australian* 12 November 2007). Other prominent UN officials promoting the discourse of climate change activism during 2007 included then executive secretary of the UNFCCC Yvo de Boer, then executive director of the United Nations Environment Program (UNEP) Achim Steiner, and special advisor to the UN Secretary-General and former director of the UN Millennium Project Jeffrey Sachs. Another highly influential proponent of the discourse of climate change activism was Nicholas Stern, former chief economist at the World Bank, and then senior advisor to the British Treasury and author of *The Stern Review*. During 2007, he visited Australia, meeting the Prime Minister and Opposition Leader, addressing the Lowy Institute in Sydney and meeting with business leaders, academics and journalists (Button 21 March 2007).

A number of representatives of non-government organisations became increasingly vocal about climate change during 2007, including Andrew Hewitt, the CEO of Oxfam, as well as representatives of World Vision, Christian Aid, and the Brotherhood of St Laurence. Both the Catholic and Anglican Churches also contributed to the discourse of climate change activism with the Anglican General Synod passing an environmental canon (church law) recognising that climate change is a serious threat to present and future generations and seeking to reduce the environmental footprint of the church and its agencies (*The Age* 26 October). Finally, many members of the public actively participated in the discourse of climate change activism, writing letters to the editor, participating in programs run by government and non-government organisations, taking steps to reduce their personal emissions, and taking part in actions to raise awareness and pressure governments to take action, as illustrated in Figures 7.1 and 7.2.

## Grassroots demands for climate action



Best foot forward: Dozens of children from Treasurer Peter Costello's electorate of Higgins prepare to visit him and present a banner calling for action on climate change. Their visit is part of a growing grassroots push that has resulted in about 100 community groups springing up across Australia. A national alliance of environment groups today launches a pre-election campaign dubbed "The Big Switch", aimed at persuading voters to demand greenhouse emission cuts from their MPs. PICTURE PAUL ROVERE

**Figure 7.1 Public participation in the discourse of climate change activism.**  
Source: The Age (15 June 2007).

## The great Australian walkabout puts Garrett through the mill as Turnbull gives boos a miss



**Figure 7.2 Public participation in the discourse of climate change activism.** *Source:* Ker & Moynihan (12 November 2007).

### **7.3 KEY LINGUISTIC AND RHETORICAL CHARACTERISTICS<sup>52</sup>**

The discourse of climate change activism is characterised by varied linguistic and rhetorical features, with some actors using dry and cautious language, while others employ a dire lexicon. Also prevalent within the discourse of climate change activism is the use of illness and war metaphors to highlight the nature and severity of climate change, with others using satire to convey the inadequacy of current responses to climate change. Finally, climate change activism has contributed to the advent of a number of new words and phrases around the issue of climate change.

#### **7.3.1 Dry and Cautious Language**

Many scientific texts within the discourse of climate change activism were characterised by their dry and cautious language, discussing climate change and possible impacts using few, if any, adjectives. Boykoff and Rajan (2007:209) observed that “scientists tend to speak in cautious language when describing their research and to discuss implications of their research in terms of probabilities”. As Malcolm Hughes, a climate change scientist at the University of Arizona explained:

Scientists in most cases will emphasise the condition clauses in any sentence because if you are close to the issue, you are aware of the scientific uncertainties (Hughes in Boykoff and Rajan 2007:209).

As highlighted by Boykoff and Rajan (2007:209), “for journalists and policy-makers this is difficult to translate into the crisp commentary that is valued in communications and decision-making.” In contrast to the sparse, measured and precise nature of most written scientific texts many spoken texts produced by scientists tended to be rambling and vague. Paradoxically, scientists’ spoken texts were more conversational and less structured than other actors’ within the climate change debate. This was possibly because scientists don’t necessarily plan or script their spoken texts in the way that politicians or NGO representatives do. But it also appeared at least partly due to their tendency to qualify their statements. For example, when asked a relatively simple question during a television interview, Pearman answered with a long, convoluted and possibly confusing response:

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<sup>52</sup> Bold has been used to highlight key words and phrases in this section, in each case this emphasis has been added and does not constitute part of the original quote.

KERRY O'BRIEN: Which parts of the world are going to be most hit by the scenario reflected in this report, broadly?

GRAEME PEARMAN: I think the reality is that there are two parts to that – one is what will actually happen to the climate system, so what we're seeing is, throughout the world, drying in the middle latitudes, as we're predicting for Australia. That will occur in the northern hemisphere as well, so those areas are subjected to the same kind of water stress issues that we are. The tropical areas are going to be warmer but they're also going to have more intense tropical storms, but for some areas of the northern hemisphere countries, they will have more rainfall. There may be positive things out of that. It depends on which perspective you have. If you look at an ice-free Arctic, some people who live in northern Russia may in fact find that as a positive thing. It's part of the problem that everyone will perceive the results of this in a different way (7.30 Report 2 February 2007).

Evident here is a disjuncture or clash between journalistic and scientific discourses. Cullen suggested scientists are hamstrung – trained to use qualifiers and conditions in presenting their work to their peers, but then asked to unpick those caveats for a lay audience:

You can be criticised by your peers if you don't put all those qualifiers and references in, but if you do, the article becomes impenetrable to the normal reader. It's a real tension (Cullen in Chandler 8 August 2007).

### 7.3.2 A Dire Lexicon

Other actors within the discourse of climate change activism used more dynamic and dire language to discuss climate change and its impacts. For example, Chandler (3 February 2007) described the IPCC's findings in the following way:

After years of research and a marathon week of intense secret debate, scientists from around the world last night signed off on a **bleak** assessment of a **devastated** planet: Earth. A **turbulent** future of **violent** storms, **devastating** drought, increasing temperatures and rising sea levels is **inevitable**, according to a United Nations report released in Paris last night (Chandler 3 February 2007).

Similarly, Rachel Warren of the Tyndall Centre for Climate Change Research (and an IPCC author) argued that “The picture that emerges from the research is **quite appalling**. It is just **horrendous** realising what damage climate change can do to ecosystems” (Warren in Leake 2 April 2007). Dayton (7 April 2007) used dramatic verbs as well as

adjectives to describe some of the “**alarming** forecasts” and “**dire** predictions” contained in the IPCC’s report:

The productivity of the world’s oceans is likely to **plunge**, as the seas become acidic, with today’s coastlines **vanishing** as sea levels rise and increasingly **fierce** storms **lash** the shores. Agricultural systems are expected to change **dramatically**, as parts of the planet become too hot or too cold for traditional crops. And glaciers providing fresh drinking water to people in the most populated parts of the world, such as Bangladesh, would **disappear**, leaving nothing but **thirst** (Dayton 7 April 2007).

Some activists deployed this dire lexicon to highlight the seriousness of specific impacts associated with climate change, such as sea level rises:

“We are talking about a potentially **catastrophic** set of developments,” Achim Steiner, the head of the UN Environment Program said of the likely impact of rising temperatures... “Even a half-metre rise in sea levels would have **catastrophic** effects in Bangladesh and some island states” (Doyle 2 April 2007).

And the destruction of coral reefs:

It is probably too late to save the Great Barrier Reef and other coral reefs from global warming. Even if governments implement far-reaching measures to cut greenhouse gas emissions, they will not prevent the **annihilation** of coral reefs around the world. “There is a **terrible** future ahead of us for the reefs,” said Canada-based United Nations University professor Peter Sale (Roberts 14 December 2007a).

In his Nobel Peace Prize acceptance speech in December 2007, Al Gore, used this lexicon to express the magnitude of the risks associated with climate change and suggest the urgency with which we need to address the issue:

We, the human species, are confronting a planetary **emergency** – a **threat** to the survival of our civilisation that is gathering **ominous** and **destructive** potential... The **catastrophe** that is now threatening us is **unprecedented**... the penalties for ignoring this challenge are **immense** and growing, at some near point would be unsustainable and **unrecoverable** (Gore 12 December 2007).

Activists also used dire language to convey the argument that climate change is already happening:

We're already in the middle of it, Darfur, Sudan, the **great humanitarian tragedy** on the planet, is in part a result of a significant drop of rainfall. 30 to 40 per cent over different parts of that region of Sudan in the last 40 years, that the climate scientists say is very likely the result of anthropogenic or human made effects both aerosol pollution and long term climate change. We see the results of this kind of drop of rainfall. You've had population movements that have led to **huge ethnic conflict** which have led to an **explosion of violence**, a **huge hunger, chronic undernourishment** which is causing **massive deaths** from disease and also **massive numbers of deaths** from the conflicts of herdsmen and sedentary farmers that are competing, violently now for very scarce water supplies so the dangers of climate change in the poor countries already at the edge. That's not simply something for the future. It's something that's being experienced now and we're already seeing how **horrendous** the results can be (Jeffrey Sachs on *The 7.30 Report* 4 December 2007).

Here, Sachs also added weight and gravity to his narrative by using Darfur as an exemplar of the dire consequences of climate change. Two other exemplars widely used by activists during 2007, were Hurricane Katrina which killed more than 1800 people, and temporarily displaced 1.5 million people in the US during 2005, and the 2003 heatwave in Western Europe, thought to have killed up to 75 000 people, both of which highlight the potentially disastrous consequences of climate change for developed countries (e.g. Bogardi in *The Australian* 16 June 2007; Schneider on *Lateline* 2 October 2007).

### 7.3.3 Illness Metaphors

Widely prevalent within the discourse of climate change activism was the use of metaphors that drew parallels between climate change and illness. For example, Powell suggested that "Climate change, air pollution, land degradation, overpopulation, increasing natural disasters: these are all symptoms of a **sick planet**" (Powell 14 November 2007). Similarly, Brown (13 July 2007) suggested that solar power potentially offers a "**cure**" for "the **self-inflicted disease** of climate change now menacing society". He likened the impact of fossil fuels on Earth to the impact of cigarettes on smokers' health:

Senator Brown said the tobacco industry was being phased out because its fumes ruined people's health. "The coal industry must be phased out because its fumes are **wrecking the planet's health**" (Brown in *The Age* 10 February 2007).

Greenpeace spokesperson Stephen Campbell also drew parallels between climate change and smoking insisting that we need to "**quit our addiction** to fossil fuels and switch to

clean renewable energy and increase energy efficiency” (Campbell in *The Australian* 29 March 2007a), while Flannery compared climate change to cancer:

A useful analogy is the development of cancer in the human body. In a sense, the IPCC report we had last week was the experts saying, “We’ve got a very serious problem. **The Earth has got a serious disease.** We don’t know yet whether it’s got to that point where it’s metastasised and run away but we need to start treating it soon and effectively” (Flannery on *Lateline* 7 February 2007).

Stern made an even more explicit comparison, highlighting the significance of what may seem to be a relatively small increase in global average temperature projected by scientists, by comparing it to an increase in human body temperature:

5 degrees centigrade is enormous. You can think of it like the temperature of a human being. The temperature of a human being is 37 degrees centigrade. If you add 5 degrees centigrade to that, you’re in very bad shape, indeed, and probably dead (Stern on *Lateline* 28 March 2007a).

Gore also likened climate change to a fever, adding that we have had a second, third and fourth opinion to confirm the diagnosis that it is caused by humans:

**The Earth has a fever. And the fever is rising.** The experts have told us **it is not a passing affliction** that will heal by itself. We asked for a second opinion. And a third. And a fourth. And the consistent conclusion, restated with increasing alarm, is that **something basic is wrong.** We are what is wrong, and we must make it right (Gore 12 December 2007).

Victorian farmer and Climate Project Australia ambassador, Bruce Beatson elaborated upon this analogy, adding that under the circumstances, the government’s inaction is inexplicable:

If John Howard went to the doctor and was told he had a potentially terminal illness but something could be done about it – it won’t be comfortable, it will be painful and there will be consequences, but we can save you – he would say, “right, let’s solve this”. So why when respected scientists come to him and say **the planet has got a terminal illness** he does nothing about it? (Beatson quoted in Morton 10 November 2007).

### 7.3.4 War Analogies

A second group of analogies observed within the discourse of climate change activism emphasised the scale and seriousness of climate change by comparing its potential effects with those of war. For example, as well as acknowledging that climate change is likely to be a “major driver of war and conflict” in coming years<sup>53</sup>, United Nations Secretary General Ban Ki-moon argued that climate change *itself* poses as great a threat to the world as modern warfare:

For my generation, coming of age at the height of the Cold War, fear of nuclear winter seemed the leading existential threat on the horizon... But the danger posed by war to all humanity – and to our planet – is at least matched by climate change (Ban Ki-moon in Lynch 3 March 2007).

Similarly, Stern argued:

My father’s generation’s crisis was fighting fascism. Ours is fighting climate change. It is much harder because you can’t see it, it is not an obvious threat. But the solution is in our hands (Stern in Button 21 March 2007).

In fact, one of the most widely reported findings of *The Stern Review* was that:

Our actions now and over the coming decades could create risks of major disruption to economic and social activity, on a scale similar to those associated with the great wars and the economic depression of the first half of the 20<sup>th</sup> century (Stern 2007:xv)

Then UK Chief Scientist Dr David King also drew a comparison between climate change and war in his widely reported assertion that “climate change is the most severe problem we are facing today, more serious even than the threat of terrorism” (King in Brown and Oliver 9 January 2004). In the Australian context, Tim Flannery supported this statement, also adding the argument that we need to respond to climate change as though we are at war. He insists that the Australian Government:

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<sup>53</sup> Jan Egeland, a former senior UN official for humanitarian affairs argued that in fact, “we’re already seeing the first climate wars, in the Sahel belt of Africa” (Egeland in Baldwin 15 October 2007).

...needs to be getting a war footing using some of the budget surplus to start building the infrastructure to get on the transition path to lower emissions energy as soon as possible... Economists may tell you that it will take 20 years but when there is a war on you get it done in a few years so we need to act quickly (Flannery in *The Age* 14 February 2007).

An argument also made by Gore:

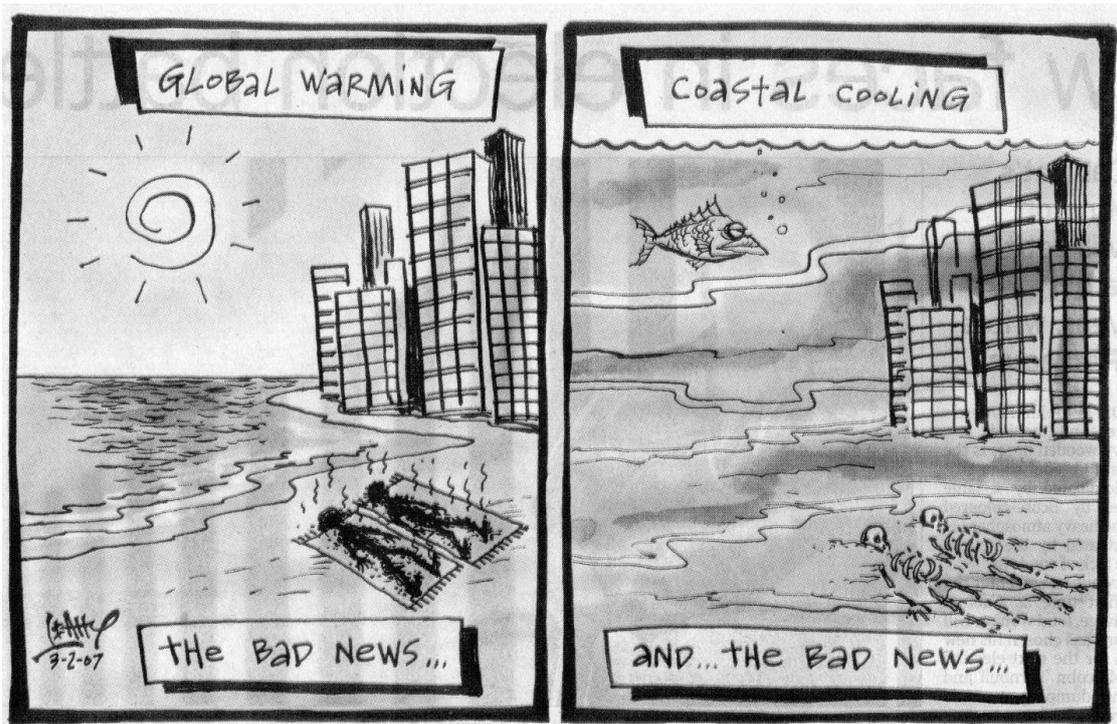
We must quickly mobilise our civilisation with the urgency and resolve that has previously been seen only when nations mobilised for war. These struggles for survival were won when leaders found words at the eleventh hour that released a mighty surge of courage, hope and readiness to sacrifice for a protracted and mortal challenge (Gore 12 December 2007).

### **7.3.5 Satire**

On a lighter note, the discourse of climate change activism often used humour or satire to frame actors within the climate change debate and characterise responses to the issue. For example, Burkeman (4 February 2007) humorously highlighted the rigorousness of the IPCC process:

Every phrase in the report had been dissected, every sentence debated over several days, among 300 delegates representing 600 scientists and 113 countries, until everyone present concurred on every word. When the members of the panel agree on something, they really agree. You wouldn't want to be there when they discuss where to go for dinner (Burkeman 4 February 2007).

Many cartoonists also contributed to the discourse of climate change activism, using visually humorous texts to convey key messages including 'climate change is happening' and 'climate change is serious', particularly in relation to the IPCC's findings regarding rising sea levels, as shown in Figures 7.3:



**Figure 7.3 The bad news and the bad news.** *Source:* Leahy (3 February 2007).

In a series of small cartoons, accompanying articles during 2007 Wilcox mocked ongoing scepticism about climate change in Australia:



**Figure 7.4 Three cartoons by Cathy Wilcox.** *Source:* Wilcox (13 July 2007).

Other cartoonists commented on the inadequacy of current responses to climate change, as shown in Figures 7.5 and 7.6:

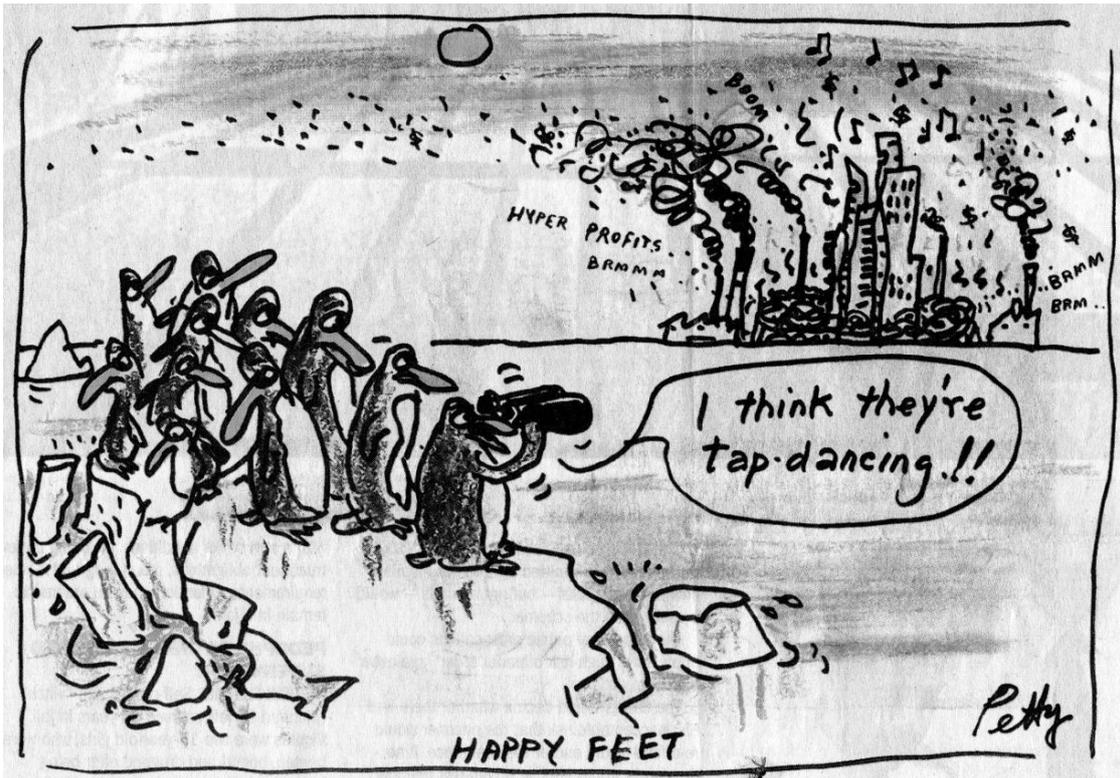


Figure 7.5 I think they're tap-dancing! Source: Petty (5 February 2007).



Figure 7.6 Global finger crossing. Source: Weldon (in Radcliffe 2007:25).

In September 2007 the lobby group GetUp! created a 30 second advertisement sending up the government's Climate Clever ads:

In the real thing, characters say they don't know much about various subjects but can do specific things to be climate clever. In the spoof, an advertising type says: "I don't know much about implementing effective policy on climate change, but create an ad campaign to make the Government look greener? I can do that." A family is in floaties with a woman saying: "I don't know much about rising sea levels, but buy me and my family floaties? I can do that." (Grattan 26 September 2007).

In 2007, GetUp! had 200 000 online members, and following the release of this ad, it raised more than \$100 000 in individual contributions in one day, with more than 2000 people donating online (Doherty 28 September 2007). Cartoonist Weldon also used satire to highlight the inadequacy of the government's Climate Clever ad campaign, as shown in Figure 7.7.

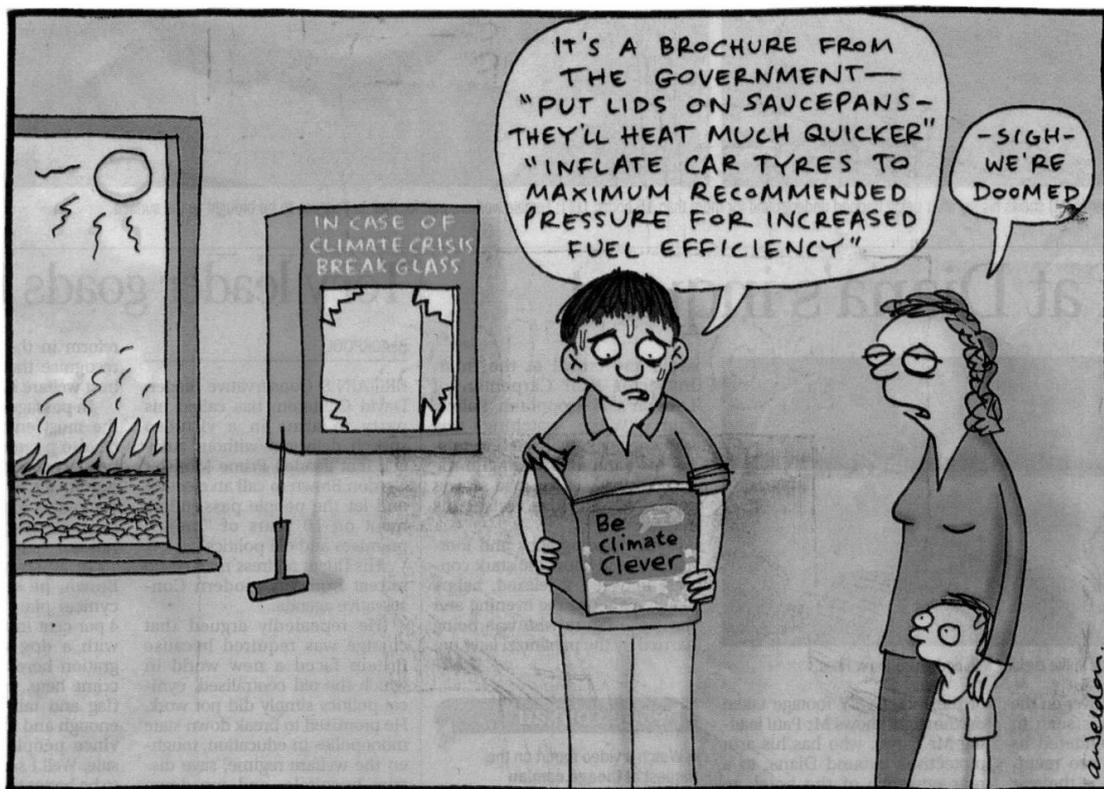


Figure 7.7 We're doomed. Source: Weldon (6 October 2007).

### 7.3.6 New Words and Phrases

As well as giving new currency to a range of existing words such as ‘green’, ‘greenwashing’, ‘environmentally-friendly’ and ‘eco-friendly,’ the discourse of climate change activism has given rise to several derivatives of these words, such as ‘climate friendly’, ‘green energy’, ‘green power’, and contributed to the emergence of several new words and phrases around the issue of climate change. One of the most prevalent of these during 2007 was ‘carbon footprint’, which refers to “the amount of carbon dioxide released into the atmosphere as a result of the activities of a particular individual, organisation or community” (Oxford Dictionary 2012). Allenby (15 September 2007) suggested that the Live Earth concerts in July 2007 were “a marker for when the expression ‘carbon footprint’ entered the popular lexicon”. Certainly, the phrase was used extensively by both promoters and critics of the Live Earth concerts. For example, Live Earth advisor Michael Molitor explained:

We’re trying to move people to be a huge agent for change. Measure your **footprint**. Reduce your **footprint** everywhere you can and if you can’t, offset it (Molitor in Shedden 7 July 2007).

While Westerman (9 July 2007) argued that “the whiff of hypocrisy has dogged LiveEarth... One of the most serious criticisms is that LiveEarth itself has left a hefty **carbon footprint**”. However, the expression was also widely used in the climate change debate more generally during 2007. For example, a report compiled for the Brotherhood of Saint Laurence calculated that “The average Australian household’s **carbon footprint** during 2007 was 32 tonnes a year” (quoted in Minchin 16 June 2007). Many texts provided suggestions for how readers could reduce their carbon footprint (e.g. Minchin 9 June 2007). Others considered the carbon footprint of businesses and companies (e.g. Mitchell 7 August 2007), or of the carbon footprint of individual products (e.g. Mello 17 September 2007).

Two other increasingly popular expressions during 2007 were ‘carbon offsetting’ and ‘carbon neutral’, with Hutcheon observing that “If **carbon footprints** are the latest fixation, ‘**offsetting**’ is the new buzz word, and offsetting schemes are multiplying” (Hutcheon on *Lateline* 14 March 2007). Dubecki (2 June 2007) agreed:

While the federal government wasn't looking, the environmental buzz words '**carbon neutral**' went mainstream... voluntary offset schemes are already booming. Worldwide, offsetting was worth more than \$180 million last year and Australia now has more than 17 companies promising individuals and business '**carbon neutrality**' through schemes that compensate for their carbon emissions (Dubecki 2 June 2007).

Some climate change activists were critical of offset schemes, and the term climate neutral also remained contested. Gettler (3 May 2007) explained that "There are not mandatory standards for what **carbon neutrality** actually means. As a result, claims by companies that they are going carbon neutral might be meaningless and misleading".

Another new phrase that has emerged from the discourse of climate change activism is 'climate change refugee'. A number of actors within the discourse of climate change activism raised this issue during 2007. For example, Hood (3 February 2007) suggested that "millions of people already could be classified as '**climate refugees**' and their numbers could swell to 200 million by century's end". While a report published by Christian Aid in May 2007 suggested that global warming will create as many as 1 billion refugees by 2050 as water shortages and crop failures, floods and famines, coastal flooding and erosion and damage to infrastructure from extreme weather force people to leave their homes (Christian Aid 2007:1-3). However, the lexical classification of these people as refugees gave rise to some controversy:

What constitutes a refugee can stoke an emotional debate for some. Critics of the term say it is a politically-charged misnomer which is liable to hype or inaccuracy (Hood 3 February 2007).

Bogadi, director of the United Nations University's Institute for Environment and Human Security based in Bonn Germany, says many in the international community are wary of addressing environmental migration because they fear the vague term might water down current UN protections for refugees. "If we overload the UN convention, we are weakening one of the strongest tools for protecting refugees" (Bogadi in *The Australian* 16 June 2007).

Baker highlighted the significance of how this phrase is defined:

Unlike New Zealand, which in 2001 began accepting 75 Tuvaluans a year, Australia has so far not acknowledged the prospect of climate change refugees... Documents obtained by *The Age* from the Department of Prime Minister and Cabinet state that although Australia would assist its Pacific

neighbours there is no such thing as an ‘environmental refugee’ because it is not a category under the Refugee Convention (Baker 20 February 2007).

In this context, the Howard Government used the UN’s definition of the term refugee, and in particular, the absence of any reference to environmental or climate change refugees in the Refugee Convention as rhetorical cover to ignore the issue, with the Howard Government refusing to meet with Tuvaluan government officials to discuss it.

## **7.4 DISCURSIVE STRATEGIES**

The discourse of climate change activism used a range of discursive strategies in framing different actors within the climate change debate. In particular, poor countries, poor people and future generations were framed as victims of climate change. Energy intensive countries, companies and consumers together with climate change sceptics were framed as villains, while those countries, companies, communities and individuals seeking to reduce their emissions were framed as heroes.

### **7.4.1 Positioning Strategies**

As discussed in Section 7.1, a key message within the discourse of climate change activism was that poor countries are likely to be worst affected by the impacts of climate change. In this context, the discourse constructed poor countries as victims of climate change. For example, in his address to a UNEP conference in Nairobi, Ban Ki-moon argued that:

It is the poor, in Africa and developing small island states and elsewhere, who will suffer the most, even though they are the least responsible for global warming (Ban Ki-moon 2007).

Hewett also emphasised that it is those who have contributed least to the problem who will suffer most:

There is a deep injustice in the impacts of climate change. Rich countries such as Australia are largely responsible for causing the problem, with many decades of greenhouse gas emissions. Yet poor countries are, and will be, the worst affected, facing more severe droughts, floods, hunger and disease (Hewett 5 December 2007).

The discourse of climate change activism also emphasised that these countries are the least able to address the impacts of climate change. Mike Coughlan, head of the Bureau of Meteorology's National Climate Centre argued that:

There's levels of vulnerability... Some parts of the world, the poorer countries, are much more vulnerable. They don't have the capacity to adapt and pull themselves out of it. Clearly if you have some money in the bank you are in a better position than someone who doesn't and then gets whacked by climate change (Coughlan in Sexton 4 February 2007).

The ACF's James Norman added:

Often lacking the infrastructure to even tackle day-to-day issues of social deprivation, health and hunger, the developing world has few resources left to pro-actively respond to environmental circumstances in a way that might mitigate long-term impacts. Countries with poor democratic structures, weak borders and high incidence of corruption are vulnerable to the potential for climate change triggering large-scale humanitarian crisis (Norman 26 March 2007).

The discourse of climate change activism also constructed poor people within all countries as victims of climate change. For example, Frier argued that "global warming is going to have most effect on the poorest in our community" (Freier 26 June 2007). Minchin and Murphy added:

Poorer Australians could potentially be hit twice by climate change: as well as being most vulnerable to more extreme weather, they will also pay the most proportionally for carbon prices pushing up power, petrol and food costs (Minchin and Murphy 31 May 2007).

Roger Jones of the CSIRO's Climate Impacts and Risk Division agreed, emphasising that "the poor will be disproportionately affected and that includes Australia's indigenous communities" (Jones 1 February 2007). Norman also drew attention to the disproportionate impact of climate change on Indigenous Australians:

While the economic disadvantage of Australia's indigenous communities is deeply entrenched and well documented, a recent CSIRO report *Climate Change and Health: Impacts on Remote Indigenous Communities in Northern Australia*, predicts that the economic and health status of remote Indigenous communities is likely to worsen owing to climate change. This reflects both the vulnerability of indigenous communities to environmental change and their reduced adaptive capacity (Norman 26 March 2007).

The third group of actors constructed as victims within the discourse of climate change activism was future generations. Ban Ki-moon declared that “What we do about it will define us, our era, and ultimately the global legacy we leave for future generations” (Ki-moon in Davies 26 September 2007). McMichael also constructed future generations as potential victims of climate change:

Finally, that other great moral dilemma: do we bequeath to future generations an impoverished and inhospitable world, or even, in the worst case, a world in which future generations cannot survive? (McMichael 19 November 2007).

Branson (7 June 2007) insisted that “The world is heading for environmental catastrophe if we carry on as we are... Our children and grandchildren will never forgive us for doing nothing to stop climate change”. Similarly, Gore (7 July 2007) argued that “Our children have a right to hold us to higher standard when their future – indeed, the future of all human civilisation – is hanging in the balance”. Commenting on the prolonged negotiations at the UNFCCC conference in Bali in December 2007, John Connor the Chief Executive of the Climate Institute declared “It’s not a game here – we’re playing with our children’s future” (Connor on *The 7.30 Report* 14 December 2007).

The discourse of climate change activism constructed four main groups of actors as the villains within the climate change debate. The first of these was those countries doing little or nothing to address climate change. In particular, climate change activists singled out the United States and Australia. Mattias Duwe, director of the Climate Action Network in Europe declared:

The worst climate sinners are Saudi Arabia, the USA and Australia, who not only have extremely high and mounting emissions levels but also employ insufficient and inadequate climate policies (Duwe in Wilkinson 8 December 2007).

Oxfam policy director James Ensor said the US delegation to the Bali conference did everything it could to undermine binding targets, acting “like a bunch of passengers on a jumbo jet who firmly believed a crash would only affect those sitting in economy class” (in Grattan and Murphy 17 December 2007). Jennifer Morgan, an environmental group spokeswoman agreed:

There is a wrecking crew here in Bali led by the Bush Administration and its minions... the governments of Canada, Japan, Saudi Arabia and others, with, unfortunately, Australia shadowing that group of minions (Morgan quoted in Wilkinson and Forbes 14 December 2007).

It was also argued that Australia's domestic climate change policy was seriously inadequate:

Here in Australia, we produce the largest per capita greenhouse gas emissions in the world. We are the world's largest coal exporter, so we also cause other countries' emissions. We are the country whose Prime Minister has spent the past decade using every economic diplomatic tool at his disposal to destabilise the Kyoto Protocol (Hughes 2 June 2007).

A strong focus on so-called "clean coal" and the suggested construction of nuclear power plants look more like "greenwashing" the status quo. The solar power plant planned for Victoria, the so-called "Solar Cities" and the taxpayer-funded brochures asking us to switch off the flat screen TV – they look suspiciously like public relations exercises geared towards increasingly alarmed voters (Walterlin 16 October 2007).

Some activists even drew parallels between the Australian Government's failure to act to address climate change and the Chamberlain Government's appeasement of the Nazis prior to the Second World War:

The great danger of how the Government moves from here is this: that the future of this country is not sacrificed on the altar of political expediency. Appeasement is not an option. It is not too strong a word... Enter the Prime Minister, who until recently was a climate sceptic. He would do a disservice to the country, and to his legacy for that matter, if he were now to become the Neville Chamberlain of the war on climate change (*The Age* 31 May 2007; also see Brown 13 July 2007).

The discourse of climate change activism also framed fossil fuel and energy intensive companies as culpable for causing climate change. In May 2007, Greenpeace lodged a complaint to the Australian Competition and Consumer Commission regarding the HRL Group's claim that its proposed \$750 million coal power station for the Latrobe Valley will be 'clean'. If upheld, it could lead to the withdrawal of up to \$150 million of government low-emission subsidies. Greenpeace energy campaigner Mark Wakefield said that far from being clean, the proposed brown coal power station would produce as much emissions as a similar sized black coal power station in NSW – up to 2 million tonnes annually. Greenpeace also took direct action against Port Waratah Coal Services with two

Greenpeace activists chaining themselves to a conveyor belt, which stopped ships from being loaded at Koorangang Island in Newcastle for two hours. Both activists were charged with trespass and causing malicious damage, but Greenpeace spokesperson Ben Pearson argued that:

The real damage is being caused by this coal, the coal that we've stopped being loaded would cause millions of dollars worth of climate damage, that's the real issue here, not the profits of coal companies but the damage that would be caused by that coal being used and contributing to climate change (Pearson on *ABC News Online* 22 February 2007).

The discourse of climate change activism was often sceptical of companies claiming to be addressing their contribution to climate change. For example, in June 2007 BHP Billiton<sup>54</sup> announced it would invest \$300 million over five years on a revised climate change policy including a 13 per cent energy intensity reduction target between 2005 and 2010. Environmental groups including the ACF and Greenpeace were highly critical of the policy (Murphy 19 June 2007). Don Henry, the executive director of the ACF argued:

The company has failed to set any targets for gross reductions in its greenhouse emissions... Instead of setting a target to reduce emissions, BHP has set a target to reduce "energy intensity" by 13 per cent by 2010. This would allow the company's emissions to continue to increase, so long as the company grows (Henry 21 June 2007).

The ACF also raised questions about ANZ's declarations that its Australian and New Zealand operations would be carbon neutral by 2009. ACF's acting director of sustainability strategies, Charles Berger, said questions needed to be asked about why ANZ's carbon neutrality extended only to its Australian and New Zealand operations, but excluded other parts of the Asia-Pacific region and Papua New Guinea:

It's a concern when a financial institution in a wealthy country is adopting environmental protection measures that apply only in the wealthy countries and not to its operations in less affluent areas around the world (Berger in Gettler 3 May 2007).

Activists also drew attention to a range of other companies contributing to climate change with a Greenpeace report describing Nestle, Kraft, Procter & Gamble and Unilever as

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<sup>54</sup> The second largest exporter of Australian coal after Xstrata (Andrusiak 8 September 2007).

“climate vandals” for their part in clearing tropical forests to produce cheap vegetable oil. Emmy Hafild, executive director of Greenpeace South-East Asia explained:

Tropical deforestation accounts for about a fifth of all global emissions. Indonesia now has the fastest deforestation rates of any major forested country. This investigation shows that a handful of international corporations are ultimately responsible for the slashing and burning of Indonesia’s peatland forests for food, fuel and laundry detergent. Some of the best known brands in the world are literally cooking the climate (Hafild in *Forbes* 9 November 2007).

It was far less common for consumers to be held accountable for their contribution to climate change. However a number of actors within the discourse of climate change activism did draw attention to the role of individuals in causing climate change. For example, Ban Ki-moon declared: “We are all complicit in the process of global warming. Unfortunately, my generation has been somewhat careless in looking after our only planet” (Ki-moon in Lynch 3 March 2007). Anglican Archbishop of Melbourne, Phillip Freier was particularly critical of consumers within Western countries, constructing them as self-centred and self-indulgent:

We have often allowed the seemingly all-powerful forces of consumerism, which constantly bite at our heels, to make us self-centred and too concerned with our own comfort and economic security. Unless we say a clear and deliberate “yes” to a spirit of generosity and to living life more simply, we will not resist these forces. Nor will we seek to confront them when they rob others of even the basics required for sustaining a simple, life, let alone that which allows for the possibilities of the flourishing of human potential – something we regard as sacrosanct in the West. The true costs of our self-indulgent lifestyles cannot be properly measured unless we consider their effects on the lives of those who have been forced into a new slavery in the Third World. Moreover, the true costs of our Western lifestyles cannot be properly considered unless we look at the impact on all of the rest of creation – the air, soil, plant and animal life (Freier 26 June 2007).

A number of activists highlighted that Australia’s per capita emissions are particularly high, and Australian’s use of energy particularly wasteful (e.g. Hughes 2 June 2007; Allenby 15 September 2007). Colebatch (22 May 2007) asserted that “almost unconsciously, we have adopted energy wastage as part of our lifestyle,” and Flannery agreed “we all waste a lot of electricity and I think there’s no doubt that most of us can make cuts” (Flannery on *Lateline* 24 May 2007). Some emphasised that affluent householders are responsible for a greater proportion of greenhouse gas emissions. A

research report conducted by the National Institute for Economic and Industry Research for the Brotherhood of St Laurence found that on average rich tertiary-educated Australia households contributed more than twice as much to climate change than poor households<sup>55</sup> (Minchin 16 June 2007). These findings were reiterated by the ACF's *Consumption Atlas* released in August 2007, which found that people living in Melbourne's wealthiest inner suburbs were the state's biggest greenhouse polluters, responsible for more than double the emissions of those in less affluent areas (Perkins 12 August 2007).

The final group of actors framed as villains within the discourse of climate change activism were climate change sceptics. In general there were far fewer examples of climate change activists explicitly framing climate change sceptics than the reverse (which will be discussed in Section 8.4). However, the broadcast of climate change sceptic Martin Durkin's documentary *The Great Global Warming Swindle* generated a heated response from climate change scientists and activists. George Monbiot described the documentary as a "full of scientific fraud" and "altogether a disgraceful piece of propaganda (Monbiot on *Lateline* 25 May 2007). Other's described it as a "shoddy and misleading piece of work" (Davidson 19 July 2007), "one man's highly distorted view of climate change science dressed up to look like a serious documentary" (Whetton in *The Age* 12 June 2007), "demonstrably fictitious" (Karoly in *The Age* 12 July 2007), and "so absurd as to be almost funny" (Jones in *The Age* 12 July 2007). Raupach concluded that:

The program poses as scientifically rigorous while actually using discredited data to push a scientifically indefensible position of inaction on greenhouse gas reductions. There is a danger that this push will succeed or at least cause significant delay (Raupach in *The Age* 12 June 2007).

In his detailed response to an article by climate change sceptic Len Walker, CSIRO scientist Paul Fraser also framed climate change sceptics as unscientific:

The so-called "facts" that Dr Walker cite to question the science of fossil fuel and carbon dioxide-driven climate change do not stand up to critical scientific evaluation, and their foundations cannot be found anywhere in the peer-reviewed scientific literature (Fraser 5 February 2007).

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<sup>55</sup> The average carbon footprint of Australian households was found to be 32.2 tonnes per annum, while on average rich tertiary educated households produced 57.8 tonnes, and poor households 22.3 tonnes. These calculations took into account greenhouse gas emissions associated with electricity usage and transportation, as well as the indirect emissions from producing goods and services (NIEIR 2007).

Davidson agreed that the views of climate change sceptics have too many inconsistencies to be considered scientific and argued that therefore climate change sceptics can be seen to be politically motivated:

Those who promote the views of the ‘greenhouse sceptics’ are not presenting a scientific argument – the views of the greenhouse sceptics have too many inconsistencies to constitute an alternative to mainstream climate science. By failing to apply the scepticism to their own group, the movement, which I call ‘greenhouse denial’, reveals itself as a political movement and not as an alternative body of science (Davidson 1 November 2007).

In this context several activists drew parallels between climate change sceptics and the tobacco-lobby. Williams (26 May 2007) likened climate change sceptics to “people who insist smoking is healthy, asbestos is an ideal decongestant or air a good substitute for food”, while Davidson argued:

The sceptics are playing the same game as the tobacco lobby, which managed to delay the appropriate policy response to the link between smoking and lung cancer by arguing that it wasn’t proved because lots of heavy smokers died of something else in very old age<sup>56</sup> (Davidson 19 July 2007).

Hughes further condemned the motives of climate change sceptics:

Corporations have motives to deny climate change even when the science is obvious. Exxon knew exactly what it was doing when it funded a series of junk-science climate-denial institutes and individuals whose main brief for the past, lost decade has been to muddy public discourse by jumping in with denial arguments whenever new research from real science hit the news... The only denial comes from the distorted lens of extreme ideologies and unprincipled corporate greed. They have shouted down the reset of the world for a decade (Hughes 2 June 2007).

Christoff (9 July 2007) provided perhaps the most damning framing of climate change sceptics found in the media texts collected. Like Davidson and Hughes, he refers to climate change deniers rather than climate change sceptics, drawing a parallel between them and Holocaust deniers, and arguing that they are equally irresponsible and immoral:

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<sup>56</sup> Hamilton (2007:128-9) reveals that the links climate change scepticism and the tobacco lobby go much deeper than mere analogy, with former tobacco lobby front group The Advancement of Sound Science Coalition receiving funding from fossil fuel companies including Exxon to promote climate change scepticism in the US.

There are grave risks in drawing analogies with any aspect of the Holocaust. One easily oversteps the mark, losing a valid point amid counter-accusations of hysterical overstatement, of engaging in distressing, offensive and exploitative miss-association. Even so – and because of its resonance with Holocaust denial – the term “denier” can be used to describe those who trivially reject the existence and threat of global warming. I use that analogy with great hesitation, but given what’s at stake – the future of humankind rests on quick and uniform international action – it illustrates the immorality and potential damage of climate change denial... The climate change deniers proceed without presenting valid scientific counter-evidence. Denial here is a deliberate act intended to fan ideological confrontation or to generate controversy rather than truthful, honest, engagement equal to the problem – and the ecological, social and economic concerns – which global warming presents (Christoff 9 July 2007).

#### **9.4.2 Relational Strategies**

The discourse of climate change activism was less coherent in framing itself and its role in the climate change debate. One theme that emerged was that the scientific actors within the discourse tended to be cautious and conservative. This is in keeping with the scientific method which emphasises precision and the measurement and statement of uncertainty, but can lead to reticence, and delay the communication of important concepts (Hodgson and Barns 1998:148; Risbey 2008:27-8). The IPCC Assessment Reports take up to six years to compile, review and edit and as a consequence the data they contain can be already out of date by the time that they are published. For example, the IPCC’s Fourth Assessment Report was only based on data up to 2005, and by the time it was published in 2007 more recent studies were projecting significantly higher rises in sea level than projected by the IPCC report (e.g. Hansen 2007).

Some climate change scientists were concerned that this cautiousness may create greater rather than less uncertainty for the public, possibly contributing to confusion and doubt as to whether the consequences of climate change are serious. For example, Hansen argued that:

We may rue reticence if it means no action is taken until it is too late to prevent future disasters... Caveats are essential to science. They are born in scepticisms and scepticism is at the heart of the scientific method and discovery. However, in a case such as ice-sheet instability and sea-level rise, excessive caution also holds dangers (Hansen 2007).

While Schneider suggested that:

The scientific community already goes overboard ‘unmasking’. Politicians have told me dozens of times that if we scientists don’t stop caveating everything so much, they won’t be able to get political support for strong action (Schneider 2001:341).

There were varying views among scientists about the role they should play in the broader public debate about climate change. Some argued that scientists should only provide the ‘facts’ and not advocate particular solutions. For example, at a press conference following the release of the first volume of the IPCCs Fourth Assessment Report in 2007, Susan Solomon, one of the co-chairs of the IPCC Working Group I, was asked what should be done about climate change. She replied:

It’s not my role to communicate what should be done. I believe that’s a societal choice. Science is one input to that choice. Science can best serve society by refraining from going beyond its expertise (Solomon in Burkeman 4 February 2007).

Other scientists strongly felt that they have an important role to play in suggesting what needs to be done, and pressuring decision makers to move towards implementing solutions (e.g. Risbey 2008:27-8). Thus, increasingly, scientists are engaging more extensively with government and non-government organisations and the media in efforts to bring about a more effective response to the issue of climate change. In December 2007, more than 200 scientists, many of whom participated in the IPCC process wrote a letter to the delegates of the UNFCCC conference in Bali, urging immediate action. The group said that speaking outside of any institutional affiliation allowed them to take a political stand, which the IPCC had not permitted. Australian climate change scientist Matthew England explained that:

This declaration is very much grounded in the IPCC document... the IPCC does not advocate policy and it does not advocate reductions... We, on the other hand, can stand up today and present these findings independently of that process (England in Fitzpatrick 7 December 2007).

Other actors within the discourse of climate change activism were less constrained and, as discussed within Section 9.3, used a wide variety of linguistic and rhetorical strategies to actively promote concern about climate change. Greenpeace Clean Energy Campaigner Ben Pearson asserted:

You place something that wasn't previously part of the discourse on the table, it then becomes part of the debate, and then by redefining where the outer limits are, and then by being an effective, noisy advocate, you start to drag the whole debate towards you (Pearson in Warren 28 April 2007).

At the same time several activists were at pains to emphasise that what they were calling for was reasonable not extreme:

We now face nothing less than a global emergency. We must rapidly reduce carbon emissions and encourage alternative energy sources, far faster than either government or opposition are prepared to acknowledge, and begin preparations for a global oil shortage. This is not an extreme view; the extremists are those in government and business who have been in denial for the past decade (Dunlop 23 October 2007)

As discussed in Section 7.2 the discourse of climate change activism encompassed all those actors taking action to address climate change. The final relational strategy within this discourse constructed those countries, communities and individuals trying to reduce their emissions as the heroes within the climate change debate. For example, Williams (18 June 2007) constructed Sweden as a pioneer in addressing climate change praising its efforts to reduce its greenhouse gases: "Today, Sweden's annual greenhouse gas emissions are just over 5 tonnes per capita, compared with Australian and US levels in the high 20s and climbing". In particular, he discussed the many initiatives undertaken by the Swedish city of Vaxjo, which is "chasing a future free of fossil fuels". The city has switched from burning oil to burning forestry waste to generate electricity, using the heat generated to provide hot water, and heat domestic and commercial buildings. It also promotes bike-riding, public transport and communal green-car fleets, and has policies in place to redesign housing and encourage high-density living over urban sprawl. As a consequence, Vaxjo's emissions are just 3.5 tonnes per capita, the lowest urban level in Europe (Williams 18 June 2007).

In Australia, *The Age* constructed Castlemaine as a community leading the way in efforts to address climate change:

Communities are showing that something can be done. Castlemaine, in central Victoria, was once home to the gold-rush. Now it is turning green and showing that people can and do have the power (*The Age* 5 June 2007).

The town of 8000 has seen people from all walks of life – from businesses and schools to the council – working to slash the town’s greenhouse emissions and water use (Minchin 5 June 2007).

The discourse of climate change activism also emphasised the pivotal role of individuals in taking responsibility for their contribution to climate change and taking steps to reduce their greenhouse gas emissions. In June 2007 *The Age* Launched a ‘Green Challenge’ for readers “to celebrate ways that ordinary householders are doing their bit to save energy, water and fuel” (Minchin 9 June 2007). A wide range of texts documented the efforts of individuals to reduce their emissions by a wide variety of means including buying products with less packaging, composting, recycling, and buying recycled products, installing compact fluorescent light bulbs and switching off lights in unused rooms, buying more energy efficient appliances, switching off appliances at the wall, installing solar hot water heaters, insulation and photovoltaic solar panels, buying renewable energy, driving and flying less, buying hybrid vehicles, and using public transport. Within the discourse of climate change activism these individuals and families were constructed as “concerned,” “inspired,” “ambitious,” “determined”, “committed,” “enthusiastic,” “passionate,” “innovative,” and “creative”, taking responsibility for their actions, and motivated by a desire to help the environment, the community and future generations (Minchin 9 June 2007; Topsfield 9 June 2007; Minchin 15 June 2007; Rule 6 July 2007).

## **7.5 CONSTRUCTIONS OF CLIMATE CHANGE**

The discourse of climate change activism encompassed a range of constructions. Firstly it recognised that climate change is a complex scientific problem. However, fundamental to the discourse was the construction of climate change as a *problem*. For some activists, climate change was one of many environmental problems that need to be addressed. For others it was an economic imperative, an opportunity, a moral issue, or a crisis of unprecedented scale and severity.

### **7.5.1 One of Many Environmental Issues**

Since its emergence during the 1950s - 1970s the environmental movement has sought to raise awareness and promote action in relation to a wide range of environmental issues, including pollution, wilderness preservation, species extinction, resource depletion,

uranium mining, energy supply, biodiversity, environmental justice and climate change (Hutton and Connors 1999:126; Williams 2006:11-23). In this context, the discourse of climate change activism sometimes constructed climate change as one of many environmental issues that need to be addressed. For example, Cribb argued:

It has been clear for some years that Australia's governments are unable to keep up with the pace of scientific progress. Emerging issues such as climate change, the water crisis, gene modification, extinctions and future energy are leaving our politicians and bureaucrats flat-footed (Cribb 19 September 2007).

Similarly, Coyne and Hoekstra (10 November 2007) characterised climate change as “one of many threats” citing land-clearing, introduced species, soil-erosion, increased pollution and run-off, water shortages and particularly species extinctions as other key issues of concern. Lindenmayer (2007:121-123) listed climate change as the tenth of ten problems constituting “Australia’s environmental crisis”, while on its website, WWF Australia, cited climate change as one of six conservation projects that need to be tackled (WWF 2012). Similarly, the Wilderness Society identified climate change as one of “the 12 most serious threats to nature protection in Australia” (The Wilderness Society 2012).

### **7.5.2 An Economic Imperative**

The second key way in which climate change was constructed within the discourse of climate change activism, and indeed the broader climate change debate, was as an economic imperative. For example, *The Age* business editor Michael Short described climate change as “a hardcore set of issues for business, not something soft or trend-driven” (Short 12 February 2007). While Rowley argued that:

Even if the science of future climate change is half right, given the level of risk involved with warming and climate instability, the precautionary principle must be applied. Not so much to save the planet but to secure the economy (Rowley 13 July 2007).

This construction became firmly entrenched within the climate change debate with the publication of *The Stern Review* during 2006, in which Stern concluded that climate change “must be regarded as market failure on the greatest scale the world has seen” (Stern 2007:27). Gettler suggested that climate change has become “one of the most prominent matters in business leaders’ minds,” and that “carbon is set to become one of the world’s

biggest commodity markets” (Gettler 28 November 2007). Jacques agreed that climate change is evolving into “an economic force”, with 1000 companies worldwide involved in climate change industries:

Companies and investors are quickly realising that climate change is not merely a social, political or moral issue, but an economic and business issue as well. This is translating into a wave of investment and innovation (Jacques in Chong 19 October 2007).

At the same time, a PricewaterhouseCoopers report asserted that there is little doubt climate change represents a “real threat to companies’ future earnings,” and concluded that businesses must “design and implement a robust and effective carbon management strategy” (PricewaterhouseCoopers 2007:24). Mark Goddard, climate change partner at PricewaterhouseCoopers argued that:

Climate change already represents a material risk to many companies. In turn, businesses that do not respond robustly to these demands may be putting shareholder value at risk and could see the market place a discount on their share price (Goddard in Murphy 31 August 2007).

Indeed, throughout 2007, climate change was regularly reported as a “business risk” (e.g. Weekes 8 April 2007; Kuykendall 8 September 2007). However, beyond acknowledging that climate change will impact on business, many were unsure of what that impact will be. For example, a study commissioned by the Australian Industry Group and Sustainability Victoria, surveyed 810 manufacturers, commercial building firms and contractors with a combined workforce of more than 56 300. They found that while 78% of companies surveyed felt a responsibility to help cut greenhouse gases nearly half could not say if climate change would be a net loss, gain or neutral for their business<sup>57</sup> (Ryan 11 September 2007; Lateline 12 September 2007).

### **7.5.3 An Opportunity**

The discourse of climate change activism also constructed climate change as an opportunity. Dunlop (9 June 2007) suggested that “in addition to the main objective of putting humanity on a sustainable footing” the move to a low carbon economy represents

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<sup>57</sup> Similarly, a report compiled for KPMG found that relatively few businesses had taken measures to address climate change with only 23% of respondents believing their companies had effective plans to deal with the impact of climate change (The Economist Intelligence Unit 2007:5)

“the greatest business opportunity we have ever seen”. Indeed, an increasing number of business actors contributed to this construction. For example, prominent businessman Richard Pratt, chairman of Visy Industries argued that:

Most companies, including most in Australia, are still focusing on the cost of meeting climate change targets... My advice to all business is to start to change your mindset to look for the opportunities in climate change. You may well find it leads to a change for the better in your own bottom line (Pratt in Warren 16 February 2007).

The Chairman of the Committee for Melbourne, George Pappas agreed:

The reason for my optimism is opportunity: the openings climate change is offering Melbourne’s business community. The move to a carbon-constrained global economy is ushering in significant prospects for business expansion, not contraction. We may be entering another technology-driven transformation of our economy that will, as with previous ones, create efficiencies, growth and better jobs... Bold and decisive actions are required to grasp these opportunities (Pappas 9 July 2007).

Within the political realm, this construction was promoted by the then Greens climate change spokesperson Christine Milne:

Rather than seeing it in terms of costs there are enormous opportunities in moving to a low carbon economy. We only have to look at the boom that’s going on in California at the moment. Also, the energy revolution in Germany and Japan to see that moving out of old electricity generation and moving into solar and renewables creates jobs and huge amounts of investment and attracts innovators to the economy and that's what we desperately need to do in Australia (Milne on *Lateline* 23 April 2007b).

This construction was also echoed overseas. For example, Ban Ki-moon argued that climate change should be treated “not as a threat, but an opportunity” (Ban Ki-moon quoted in Franklin 13 December 2007). Similarly, US writer Ross Gelbspan argued:

I think what’s really important to understand is what we need is a common global project to rewire the world with clean energy, and contrary to what a lot of the other sides say, I think that is a recipe for a huge expansion in the amount of wealth in the global economy. I think were we to do what the science tells us to do, which is not 10 and 15 and 20 per cent, but 80 per cent reduction... That would create millions and millions of jobs, especially in poor countries; I think it would turn developing countries into trading partners. I think it would really expand the overall wealth of the global economy and

certainly the overall security of the global political situation (Gelbspan on *Lateline* 9 April 2007).

Finally, Gore suggested that beyond economic opportunities associated with addressing climate change there lies an opportunity for moral and spiritual change:

The climate crisis offers us the chance to experience what few generations in history have had the privilege of experiencing: a generational mission; a compelling moral purpose; a shared cause; and the thrill of being forced by circumstances to put aside the pettiness and conflict of politics and to embrace a genuine moral and spiritual change (Gore 7 July 2007).

By facing and removing the danger of the climate crisis, we have the opportunity to gain the moral authority and vision to vastly increase our own capacity to solve other crises that have been too long ignored (Gore 12 December 2007).

Here Gore also contributed to the next construction to be examined: climate change as a moral issue.

#### **7.5.4 A Moral Issue**

Perhaps less prominent than the other constructions discussed so far, the construction of climate change as a moral issue, was nonetheless promoted by several key activist actors, particularly Al Gore. He declared:

This is not a political issue. This is a moral issue, one that affects the survival of human civilisation. It is not a question of left versus right; it is a question of right versus wrong. Put simply, it is wrong to destroy the habitability of our planet and ruin the prospects of every generation that follows ours (Gore 7 July 2007).

In his Nobel peace prize acceptance speech he reiterated this argument, describing addressing climate change as “a moral purpose that is manifestly good and true” (Gore 12 December 2007). Ban Ki-moon also characterised climate change as “the moral challenge of our generation” (Ki-moon in Franklin 13 December 2007). Similarly, in Australia, Opposition Leader Kevin Rudd described to climate change as “the great moral, environmental, and economic challenge of our generation” (Rudd in Gawenda 21 April 2007). Canberra’s Anglican Bishop George Browning asserted that society has an obligation to future generations to address climate change declaring that: “the moral

consequences of climate change are of such an order that the church cannot remain outside the debate” (Browning in *The Age* 26 October 2007).

Others focused on the moral obligations of developed countries to address climate change. Prominent ethicist Peter Singer, endorsed Opposition Leader Kevin Rudd’s stance that climate change is a moral challenge:

I applaud his courage in seeing this as a moral issue, because that’s what’s so important about it... We’ve got to see that in order to continue our rather luxurious lifestyle we are putting at risk the lives and the livelihood of hundreds of millions of poorer people who can’t defend themselves. If that’s not a moral issue, I don’t know what is (Singer in Westerman 26 April 2007).

Similarly, Ian Dunlop argued that:

It is morally indefensible and unrealistic to expect the developed world can continue to emit at these levels, with the developing world absorbing the bulk of the climatic impact and being asked to constrain its own growth (Dunlop in Davidson 17 December 2007).

Hewett (14 September 2007) argued that “as a major emitter, Australia has a moral obligation to act now and help its neighbours”. While a report released by the Institute for Sustainable Futures, made up of a coalition of non-government groups including Greenpeace, Oxfam, World Vision and the WWF found that “Australia has so far taken little serious action to stabilise its greenhouse gas emissions,” and now has a “moral responsibility” to adopt a steep target for emission cuts because of its high per capita contribution to climate change (Franklin and Ryan 4 December 2007).

### **7.5.5 A Crisis of Unprecedented Scale**

Finally, the discourse of climate change activism constructed climate change as crisis of unprecedented scale. In this context, Achim Steiner, the director of UNEP declared that climate change is “the challenge of our century” (Steiner in Burkeman 4 February 2007). Similarly, Ban Ki-moon described climate change as “an emergency” and “the defining challenge of our age” (Ki-moon in Franklin 13 December 2007). Another key proponent of this construction was Al Gore, who argued:

We, the human species, are confronting a planetary emergency – a threat to the survival of our civilisation that is gathering ominous and destructive potential... The catastrophe threatening us is unprecedented (Gore 12 December 2007).

What is at risk of being destroyed is not the planet itself, but the conditions that have made it hospitable for human beings... putting an end to the favourable climate balance on which our civilisation depends (Gore 7 July 2007).

Greenpeace spokesperson Mark Wakehan agreed that “we face catastrophe unless there is urgent action to cut greenhouse gas emissions” (quoted in Murphy 11 October 2007). This construction was promoted by a series of activist editorials published by *The Age* during 2007. It argued that: “Such problems require immediate and decisive resolution: action not promises... do nothing and the consequences will be catastrophic” (*The Age* 24 October 2007). On another occasion it declared that “It is indisputable, despite what sceptics might argue, that climate change is now the world’s greatest crisis” (*The Age* 17 December 2007). Davidson asserted that:

The scientific consensus is that another decade of business as usual runs the risk that we will have irreversible and catastrophic climate change... a further 0.6 degrees is the upper limit before the likelihood that the planet will become uninhabitable for the majority of the world’s population by the next century (Davidson 7 June 07).

Dunlop (23 October 2007) agreed that climate change threatens “the very survival and sustainability of our society and the planet,” and that “it cannot be solved by minor tweaking of business as usual”. Rather, he insisted that it is “blindingly obvious that we cannot continue conventional economic growth and rampant consumerism without destroying the planet”. Chandler (27 October 2007) summed up this construction declaring that “It’s the issue that will determine the fate of our planet.”

## **CONCLUSION**

This chapter presented a detailed analysis of the discourse of climate change activism in Australia during 2007. Five main arguments underpinning the discourse were identified: climate change is happening, climate change is serious, current responses to climate change are inadequate, urgent action is needed to address climate change, and addressing climate change is achievable and affordable. Key messages associated with these arguments included that climate change is happening more rapidly than previously thought,

that some detrimental impacts are now unavoidable, and that developing countries will be worst affected. The discourse of climate change activism was highly critical of Australia's response to climate change, with activists arguing that significant reductions in greenhouse gas emissions are crucial to address climate change. The discourse also emphasised that different countries have contributed to climate change to differing degrees and therefore have differing levels of responsibility to act. In particular, it was argued that developed countries need to take the lead in addressing climate change. Another key message was that there is very limited time in which we can avert the worst impacts of climate change. However, activists emphasised that solutions are available, and insisted that there is not a dichotomy between addressing climate change and achieving economic prosperity. On the contrary, it was suggested that taking action to address climate change will be far less costly than inaction, and will provide both benefits and opportunities.

These arguments were promoted by many different actors. Scientists and scientific organisations played a pivotal role within the discourse of climate change activism. In particular, the publication of the IPCC's Fourth Assessment Report clarified and consolidated the scientific evidence supporting the arguments described above. Locally, the CSIRO, and a number of individual scientists regularly provided insights into the implications of climate change for Australia, the need for action, and options for mitigation and adaptation. A wide range of environmentalists and environmental organisations rigorously promoted the discourse of climate change activism, with Al Gore, Tim Flannery, the ACF and Greenpeace particularly involved in the climate change debate during 2007. Journalists played a vital role in communicating the discourse with *The Age* editorial and several *Age* journalists regularly taking an activist stance. A growing number of businesses also contributed to the discourse, together with a range of other public figures, including several Labor and Green politicians, the UN Secretary General Ban Ki-moon and British economist Nicholas Stern.

A number of linguistic and rhetorical characteristics associated with the discourse of climate change activism were observed. While many scientific texts were characterised by their dry and cautious language, other activists used more dynamic and dire language to discuss climate change and its impacts, employing a range of illness metaphors and war analogies to emphasise the severity of the issue. At the same time, the discourse of climate change activism employed satire, particularly to frame current responses as inadequate.

The discourse also contributed to the advent of a number of new words and phrases including carbon footprint, carbon offsetting, carbon neutral, and climate refugees. Discursive strategies employed by activists included framing poor countries, poor people and future generations as the victims of climate change. Energy intensive countries, companies and consumers together with climate change sceptics were vilified, while countries, companies, communities and individuals trying to reduce their emissions were framed as the heroes within the climate change debate. The discourse sustained five key constructions of climate change. Some participants constructed it as one of many environmental issues that need to be addressed. Many constructed it as an economic imperative. Others argued that climate change constitutes an opportunity, a moral issue, and a crisis of unprecedented scale affecting every facet of the natural environment and human society.

## Chapter 8: The Discourse of Climate Change Scepticism

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### INTRODUCTION

The discourse of climate change scepticism first emerged in the early 1990s and has played a significant role in the climate change debate in Australia ever since (Hamilton 2007:127-64). The motives for continuing scepticism are strong. It is much easier to think nothing is wrong and do nothing to address climate change (Hughes 2 June 2007). Inaction on climate change is also extremely profitable for fossil fuel and energy-intensive businesses, which have consequently funded lobbyists, economic modellers, and influential sceptic organisations (Pearse 2007:194).

The arguments of climate sceptics have also been amplified by a tendency within the media to emphasise conflicting views and present scientific and sceptical positions as equal and opposing sides in the debate (Boykoff and Boykoff 2004:126-7; Antilla 2005:320). Although this became less common after 2005, this chapter demonstrates that the discourse of climate change scepticism continued to flourish in Australia during 2007 and beyond.

Section 8.1 will explore the five main arguments and messages promoted by the discourse of climate change scepticism. Section 8.2 will then identify the key journalists, experts, business representatives, politicians, other public figures, and sceptic organisations promoting these arguments during 2007. The linguistic and rhetorical devices used by these actors will be discussed in Section 8.3, including a derogatory lexicon, religious metaphors, opposing lexical designations, the projection of authority and a colloquial vernacular.

Positioning and relational strategies played a prominent role in the discourse of climate change scepticism, and Section 8.4 will focus on the positional and relational discursive strategies used to frame climate change scientists and activists as irrational, alarmist, corrupt, incompetent and hypocritical, and frame sceptics as rational, scientific, knowledgeable, noble and victimised. Finally, Section 8.5 will identify the key constructions of climate change promoted by the discourse of climate change scepticism, as outlined in Table 8.1.

**Table 8.1 Climate change scepticism discourse matrix.**

<p>Main Arguments and Messages</p>	<ul style="list-style-type: none"> <li>• It is not known and/or not possible to know if climate change is happening</li> <li>• Climate change is not happening</li> <li>• Climate change is not caused by humans</li> <li>• Climate change is not serious</li> <li>• We cannot and/or should not do anything about climate change</li> </ul>
<p>Actors and their Motives</p>	<ul style="list-style-type: none"> <li>• Some journalists</li> <li>• Sceptic experts</li> <li>• Some business representatives</li> <li>• Some politicians</li> <li>• Other public figures</li> <li>• Sceptic organisations and alliances</li> </ul>
<p>Key Linguistic and Rhetorical Characteristics</p>	<ul style="list-style-type: none"> <li>• A derogatory lexicon</li> <li>• Religious metaphors</li> <li>• Opposing lexical designations</li> <li>• The projection of authority</li> <li>• A colloquial vernacular</li> </ul>
<p>Discursive Strategies</p>	<ul style="list-style-type: none"> <li>• Framing climate change scientists and activists as irrational, alarmist, corrupt, incompetent and hypocritical</li> <li>• Framing climate change sceptics as rational, scientific, knowledgeable, noble and victimised</li> </ul>
<p>Key Constructions</p>	<ul style="list-style-type: none"> <li>• An unsubstantiated theory</li> <li>• A fallacy</li> <li>• A hoax</li> <li>• A conspiracy</li> </ul>

## 8.1 THE MAIN ARGUMENTS AND MESSAGES

Climate change scepticism encompassed a diverse range of arguments and messages. These can be grouped into five categories as shown in Table 8.1.

### 8.1.1 It is Not Known and/or Not Possible to Know Whether Climate Change is Happening

One form of climate change scepticism was based on the argument that it is not known whether climate change is happening. These sceptics did not necessarily deny that climate change may be happening, but argued that not enough is known about the climate system to say whether or not it is. In particular, they emphasised that there is no consensus. For example, Jacoby (22 August 2007) argued that “The jury is still out on a link between man [*sic*] and climate change... there is no clear consensus... the science is getting better, but it’s far from settled”. Similarly, Carter (10 July 2007) maintained that “no climate change concord exists and the science is far from settled”, and Schembri (5 July 2007) argued that “debate is still the operative term, and what is generally accepted as fact is far from it”.

It was also argued that there is insufficient evidence to claim climate change is happening:

Certainly the working hypothesis of CO<sub>2</sub> induced global warming is a good one that stands on good physical principles, but let us not pretend our understanding extends too far or that the working hypothesis is a sufficient explanation for what is going on (Whitehouse 24 December 2007).

Despite claims of a scientific consensus, the science of climate change is not settled. For a start, the predictions of what is going to happen to the Earth’s climate over the next 100 years are based on climate change models that are the subject of considerable dispute (Wood 29 August 2007).

Others argued that not only is it not known whether climate change is happening, it is not possible to know whether climate change is happening, because the climate system is too complex for us to fully understand. A good example of this argument was provided by scientist John Christy who contributed to the IPCC’s Fourth Assessment Report but disagreed with its findings:

I see a reliance on climate models (useful but never proof) and the coincidence that changes in carbon dioxide and global temperatures have loose similarity

over time. There are some of us who remain so humbled by the task of measuring and understanding the extraordinarily complex climate system that we are sceptical of our ability to know what it is doing and why... I cringe when I hear overstated confidence from those who describe the projected evolution of global weather patterns over the next 100 years, especially when I consider how difficult it is to accurately predict that system's behaviour over the next five days. Mother Nature simply operates at a level of complexity that is, at this point, beyond the mastery of mere mortals (such as scientists) and the tools available to us (Christy 3 November 2007).

Like Christy, many sceptics emphasised the limitations of climate models, with Maley (18 December 2007) arguing that none of the IPCC's computer-modelled global predictions have been validated by empirical observations.

### **8.1.2 Climate Change is Not Happening**

Another argument made by climate change sceptics was that climate change is not happening. For example, Walker argued that:

The fact is the earth has cooled slightly since 1998, showing evidence that a peak has been reached. And this is despite rapid rises in fossil fuel consumption and increasing carbon dioxide levels (Walker 19 January 2007).

Sceptics arguing that climate change is not happening emphasised and amplified scientific uncertainty about climate change, focusing on conflicting scientific viewpoints and allegedly contradictory data. Plumer (10 April 2007) discussed how this was a pre-meditated strategy adopted by sceptic organisations.<sup>58</sup> This argument also featured in the political realm. When asked whether he was convinced that the climate was changing, the then Deputy Prime Minister Mark Vaile responded saying:

Some scientists argue that global temperatures are going to rise by x per cent over the next 50 to 100 years, other scientists dispute that, so you've got to analyse that to determine the position... There is conflicting scientific evidence on it, on that whole concept on it, and we need to continue to analyse that (Vaile in Hart 30 October 2007).

Other sceptics claimed that evidence 'proves' climate change is not happening, selectively using data to support their position. For example Whitehouse argued that:

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<sup>58</sup> See Hamilton (2007:127-46) for a further discussion about the use of this strategy by sceptic organisations in the United States and Australia.

With only a few days remaining in 2007, the indications are the global temperature for this year is the same as that for 2006. There has been no warming over the 12 months. But is this just a blip in the ever upward trend you may ask? No. The fact is that the global temperature of 2007 is statistically the same as 2006 as well as every year since 2001. Global warming has, temporarily or permanently, ceased. Temperatures across the world are not increasing as they should according to the fundamental theory behind global warming: the greenhouse effect (Whitehouse 24 December 2007).

Kininmonth argued that:

The alarmist global warming rhetoric is based on the projections of computer models but, from considerations of basic physics, runaway global warming is an impossible proposition (Kininmonth 10 February 2007).

However, as increasing evidence that climate change is occurring emerged, fewer sceptics argued that climate change is not happening, insisting instead that climate change may be happening but is not caused by humans.

### **8.1.3 Humans are Not Causing Climate Change**

A key message promoted by many climate change sceptics was that climate change is natural and has always occurred. For example, Plimer (12 July 2007) argued that “Since the beginning of time, climate has always changed. It has warmed and cooled faster than any contemporary change. Nothing happening at present is unusual.” In this way, sceptics sought to normalise climate change:

It is common scientific ground that the temperature records show an uneven global warming (predominantly in the northern hemisphere) of less than 1°C during the past century. Such fluctuations are common in the climate record during thousands of years and there are several possible causes, especially variations in the sun’s activity, that are utterly beyond human control (Maley 18 December 2007).

These sceptics emphasised that humans have nothing to do with observed climate change:

Some of us scratch our heads and try to understand the real causes behind what we see. We discount the possibility that everything is caused by human actions, because everything we’ve seen the climate do has happened before. Sea levels rise and fall continually. The Arctic icecap has shrunk before. One millennium there are hippos swimming in the Thames, and a geological blink later there is an ice bridge linking Asia and North America (Christy 3 November 2007).

Just as sceptics arguing that climate change is not happening claimed that science and ‘the facts’ support their views, so too did sceptics arguing that climate change may be happening but is not caused by humans. For example, Carter (10 July 2007) argued that “scientific knowledge does not identify CO<sub>2</sub> emissions as an environmental harm, nor does their accrual in the atmosphere cause dangerous warming”, while Evans claimed that “the science from an anthropological point of view has collapsed. The carbon-dioxide link is increasingly recognised as irrelevant” (Evans in Murphy *et al.* 28 February 2007). Many sceptics argued that rather than being caused by humans, climate change is being caused by variations in the intensity of solar radiation:

The focus on carbon dioxide as the major producer of climate change is thus highly contrived. The facts point to natural factors (as evidenced by work on sunspot activity) being behind climate change rather than human influence through carbon dioxide levels (Walker 19 January 2007).

Durkin agreed: “Global warming is a natural phenomenon that humans have nothing to do with. The real culprit is the sun” (Durkin in Dayton 12 July 2007).

#### **8.1.4 Climate Change is Not Serious**

Some climate change sceptics not only accepted that climate change is happening but also accepted that it is being caused by humans. However, they argued that climate change is not serious, rejecting the argument that there is any need to address climate change. Some argued that projected changes in climate are insignificant and will not have detrimental impacts. For example, Lawson argued that:

While a sudden change would indeed be disruptive, what is at issue here is the prospect of a very gradual change over a hundred years and more. In any case, average world temperature is simply a statistical artefact. The actual experienced temperature varies enormously in different parts of the globe and man [*sic*], whose greatest quality is his adaptability, has successfully colonised most of it. Two countries that are generally considered to be economic success stories, are Finland and Singapore. The average annual temperature in Helsinki is less than 5C. That in Singapore is in excess of 27C, a difference of more than 22C. If man [*sic*] can successfully cope with that, it is not immediately apparent why he should not be able to adapt to a change of 3C, when he is given a hundred years in which to do so (Lawson 30 November 2007).

Lawson, and many sceptics like him, were not only very anthropocentric, ignoring the potential impacts of climate change on other species, but also Eurocentric, ignoring the impacts of climate change on people in other parts of the world such as the tropics and low lying islands<sup>59</sup>.

Some argued that climate change will actually be beneficial. For example, Kininmonth (10 November 2006) declared “recent warmth is to be welcomed”, while Plimer pointed to the benefits associated with warmer temperatures:

Both history and archaeology show that in previous warmings, temperatures were far higher than at present. Populations and the economy thrived. Previous coolings led to famine, depopulation and social disruption (Plimer 12 July 2007).

Many argued that even if it is a problem, climate change is not the biggest problem and is less important than other pressing issues:

You hear that climate change is one of the biggest challenges to mankind [*sic*] as we know it, and that’s a bit of a hyperbolic statement. There are a lot of problems out there, climate change is one... but it is not the biggest (Switkowski in Murphy 21 March 2007).

Pearson argued that climate change is “a hypothetical threat – which has got a lot of people vaguely worried about something that may well never materialise”, and positioned it as less important than “poverty and preventable disease in the developing world, international peacekeeping initiatives and winning the long war against terrorism” (Pearson 23 June 2007). In this context, sceptics argued that concern about climate change is a distraction from these other, more important issues which we should be focussing our attention on:

There are far more immediate problems such as malaria, such as AIDs, such as hunger, that we could be spending money on to alleviate suffering (Jensen in Topsfield 14 August 2007).

Cardinal Pell rejected the argument made by Opposition Leader Kevin Rudd that climate change was a moral issue. He urged caution on the issue, which he said was much less important than tackling poverty, marriage breakdown and abortion rates (Schubert 4 October 2007).

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<sup>59</sup> Lawson also repeatedly refers to ‘man’, a trait of climate change sceptics also observed by Pollard who remarks that for sceptics “to a man the human race is ‘man’” (Pollard in Hamilton 2007:143).

### **8.1.5 We Cannot and/or Should Not do Anything about Climate Change**

The fifth and final main argument made by sceptics was that we cannot and/or should not address climate change. Some argued that there is insufficient evidence to warrant potentially expensive measures to address climate change. For example, a letter signed by 103 climate change sceptics sent to UN Secretary General Ban Ki-moon argued that “the IPCC’s conclusions are quite inadequate as justification for implementing policies that will markedly diminish future prosperity” (Roberts 14 December 2007b). Christy also used uncertainty to argue that we should not address climate change, while adding the message that addressing climate change equates to ignoring other important social issues:

The uncertain effects of global warming far in the future must be weighed against disasters at our doorsteps today. Bjorn Lomborg’s Copenhagen Consensus 2004, a cost-benefit analysis of health issues by leading economists (including three Nobel laureates), calculated that spending on health issues such as micronutrients for children, HIV-AIDS and water purification has benefits 50 to 200 times those of attempting to marginally limit ‘global warming’. Given the scientific uncertainty and our relative impotence regarding climate change, the moral imperative here seems clear to me (Christy 3 November 2007).

Sceptics also argued that nothing can be done, and therefore attempts to address climate change are a waste of time and money:

Attempts to prevent global climate change from occurring are ultimately futile, and constitute a tragic misallocation of resources that would be better spent on humanity’s real and pressing problems (letter signed by 103 climate change sceptics quoted in Roberts 14 December 2007b).

Others argued that we shouldn’t address climate change because it will be economically harmful, and that the costs of addressing climate change outweigh the benefits:

Exaggerations and hype do not survive the cold hard light of the reality that many of the proposed actions will affect the living standards and even livelihoods of large numbers of people and that in the absence of similar action by all countries these measures will not have a significant effect (Parbo in Kerr 1 March 2007).

A panicked approach to dealing with climate change would cost more than it benefits... The bottom line is Australia doesn’t need to be in any rush to settle its response to climate change (Wood 14 November 2007).

Another common message was that Australia's contribution to climate change is negligible and therefore we don't need to worry about our emissions or do anything to reduce them:

The bottom line is this: Australia is a small economy on the global stage. Our contribution to the stock of greenhouse gases is very small – so small that there are no policy options available to the Australian Government that can have a significant effect on global carbon emissions. On the other hand, there are many options that could have a negative effect on our living standards... Until all of the costs of reducing emissions are fully debated and understood by the voting public, nothing should be done (Robson and Davidson 11 May 2007).

## 8.2 ACTORS AND THEIR MOTIVES

A wide range of actors coalesced around the arguments described above, including journalists, sceptic experts, business representatives, politicians, and a variety of other individuals. A number of organisations funded by corporate interests also played significant role in sustaining this discourse.

### 8.2.1 Journalists

A small but vocal group of journalists played a direct role in promoting and perpetuating the discourse of climate change scepticism. In some cases these journalists openly identified themselves as sceptics. For example *The Australian* columnist Christopher Pearson declared “as most readers will know, I am a greenhouse sceptic”<sup>60</sup> (Pearson 23 June 2007). Other openly sceptical journalists included *The Australian's* economics editor Alan Wood, *The Australian* columnist Janet Albrechtsen, *Herald Sun* columnists Andrew Bolt and Terry McCrann, and *ABC Radio* presenter Michael Duffy. *The Australian* also published a number of articles by international sceptical journalists including: Scott Norvell, London bureau chief for *Fox News*, David Whitehouse formerly Science Editor of *BBC News Online*, Jeff Jacoby of *The International Herald Tribune* and Alexander Cockburn from *The Nation* in the US.

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<sup>60</sup> In fact, Pearson was one of John Howard's speechwriters in the 1990s, and between 2004 and 2006 was paid \$11 364 by the government to write speeches (including speeches about environmental issues) for the then Foreign Minister Alexander Downer (*The Sydney Morning Herald* 22 February 2007). In 2007 he was also an advisor to Downer through his position in the Howard Government's Foreign Affairs Council (Pearse 2007:210,248).

As mentioned in Chapter 6, *The Australian* published 26 sceptical editorials during 2007, making the editorial team of *The Australian* active participants in the discourse of climate change scepticism. In particular, Hamilton (2007:196) identifies *The Australian's* editor-in-chief Chris Mitchell as an extremely influential climate change sceptic, while Pearse (2007:285) notes that:

The paper has opposed the Kyoto Protocol, emissions trading, renewable energy mandates, and a host of other measures that might reduce emissions in Australia. They have sycophantically embraced voluntary partnerships, new technology and the AP6 as the alternatives even those these 'solutions' require no cuts to greenhouse pollution by anyone ever. They have even embraced the most extreme end of the agenda – questioning the scientific basis for action and raising the spectre of green religion (Pearse 2007:284-5).

Pearse (2007:258) concludes that it is difficult to know what is behind *The Australian's* sceptical stance, but he suggests that it may be driven by the millions of dollars of advertising revenue received from vested interests each year. Hamilton (2007:200) notes however that this did not prevent almost all the major newspapers around the world accepting that climate change was happening by about the end of 2006<sup>61</sup>. *The Australian's* editorial position was further supported by the scepticism evident in the work of *Australian* reporters Brad Norington, Angela Shanahan, Denis Shanahan, Errol Simper, and Matthew Warren<sup>62</sup>, while columnist Jim Schembri ensured the discourse of climate change scepticism also reached *The Age's* readers. As well as being influential sceptics in their own right, these journalists strongly amplified the opinions of other climate change sceptics:

Because most are employed to write in a manner that invites debate, a black-and-white depiction is far better than a balanced account. Having decided which side of the greenhouse debate they are on, they are in the perfect position to deliver the messages of denial and delay... and they have done so with great enthusiasm<sup>63</sup> (Pearse 2007:160).

What all these journalists had in common is the extent to which they relied upon a small range of 'experts' to support their arguments (Pearse 2007:249).

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<sup>61</sup> Including many of Murdoch's other papers such as *The Times* and *The Sun* (Hamilton 2007:199).

<sup>62</sup> Before being appointed *The Australian's* environment reporter in 2006 Warren was the director of external affairs for the NSW Minerals Council, one of Australia's most active coal lobbies (Hamilton 2007:198).

<sup>63</sup> Pearse (2007:211) also notes that many of the most vocal media sceptics are also regular speakers at conferences and fundraising events for the IPA, CIS and Lavoisier Group, which will be discussed below.

### 8.2.2 Sceptic Experts

The discourse of scepticism was supported and promoted by a range of actors presenting themselves as experts. These actors were not only frequently quoted within media texts, they also authored opinion pieces, participated in television interviews and published books (e.g. Evans 2007; Plimer 2009). Quite a few were current or former university academics, for example:

- Don Aitken, a former vice-chancellor of the University of Canberra;
- Bob Carter, an adjunct professorial research fellow in the School of Earth and Environmental Studies at James Cook University;
- John Christy, the director of the Earth System Science Centre at the University of Alabama;
- Chris de Freitas, an associate professor in the School of Geography, Geology and Environment at the University of Auckland;
- Richard Lindzen, a professor of meteorology at MIT in the United States;
- Ian Plimer, an emeritus professor of earth science at the University of Melbourne and professor of mining geology at the University of Adelaide; and
- Alex Robson and Sinclair Davidson, economists at the Australian National University and RMIT University respectively.

Others were affiliated with think-tanks and other organisations. For example:

- William Kininmonth, the head of the Australasian Climate Research Institute.;
- Bjorn Lomborg, the director of the Copenhagen Consensus Centre;
- Barry Maley, a senior research fellow at the Centre for Independent Studies;
- Alan Moran, the director of Deregulation, and head of the Energy Forum at the Institute of Public Affairs (IPA);
- Alan Oxley, the director of the APEC Studies Centre and ITS Global Consultancy; and
- Len Walker, a fellow of the Australasian Institute of Mining and Metallurgy.

It quickly became apparent that what almost all these experts shared was a lack of expertise in climate change science, with tangential qualifications at best. For example, Aitken was a historian and political scientist, while both Carter and Plimer are geologists. Walker is a civil engineer, while Lomborg is a statistician and political scientist with no qualifications in environmental science. Robson and Davidson (and others like them) make claims far beyond their expertise as economists, while the authoritative-sounding ‘Australasian Climate Research Institute’ with which Kininmonth is affiliated is just his own private consulting business (Pearse 2007:254).

Pearse (2007:250) also reveals that most sceptic experts have close links with industry or industry-funded front groups. For example Plimer is a director of three mining companies: Ivanhoe, CBH Resources and Kefi Minerals. Lindzen has links to Exxon-Mobil, GM and other US corporations and has reportedly been funded by undisclosed Australian coal industry clients at US\$2500 a day. Carter is chief science adviser to the industry-funded Institute of Public Affairs (which will be discussed below). While he claims that his research is not funded by polluters, he does not disclose who pays for his extensive advocacy around Australia and the world (Pearse 2007:251-4). Moran confirmed that the IPA’s Energy Forum is funded by a group of a dozen energy firms (reportedly including all of the LA Trobe Valley coal fired generators and many from New South Wales) and that the IPA rarely took positions at odds with the firms funding the Energy Forum: “Obviously that doesn’t happen too often, otherwise they’d stop funding us” (Moran in Pearse 2007:282). Similarly, the APEC Study Centre and ITS Global directed by Oxley, are both funded by Xstrata, Exxon Mobile and other fossil fuel interests (Pearse 2007:269).

### **8.2.3 Business Representatives**

The third group of prominent sceptics were a small but extremely influential group of business leaders and professional lobbyists. In particular, Hamilton (2007:132) argues that two men have been at the centre of the campaign to prevent the Australian Government from taking action to address climate change: Hugh Morgan and Ray Evans. Morgan was the CEO of Western Mining Corporation (WMC) from 1986 to 2003, and a director of Alcoa from 1977 to 2001. He is also an influential member of the Liberal Party and director of the Cormack Foundation, the most important Liberal Party fund-raising vehicle. Between 2003 and 2005 Morgan served as president of the Business Council of Australia,

and he has also played a central role in the Minerals Council of Australia, the Australian Aluminium Council, the Australian Industry Greenhouse Network, the Institute of Public Affairs and the Lavoisier Group (Hamilton 2007:132-6; Pearse 2007:266-8). Ray Evans worked as a senior executive at WMC between 1982 and 2001, during which time he became involved in the US sceptic organisation, the Competitive Enterprise Institute, and created a series of right-wing activist groups including the H.R. Nicholls Society, the Bennelong Society, the Samuel Griffith Society and the Lavoisier Group. In 2006 he published a paper titled *Nine Lies about Climate Global Warming*, which was re-released as *Nine Facts about Climate Change* and launched at Parliament House in February 2007 (Hamilton 2007:136).

Two other prominent sceptic business leaders featured in the media texts collected were Arvi Parbo and Ziggy Switkowski. Described as “one of the seminal figures of the Australian mining industry” (Kerr 1 March 2007), Parbo is a former chairman of WMC, a director of BHP and Alcoa and the first president of the Business Council of Australia. Like Morgan and Evans he has downplayed the link between greenhouse gases and climate change and the need for emission reductions, and is a strong public supporter of the Lavoisier Group (Pearse 2007:240). Less extreme but equally prominent, Ziggy Switkowski was a vocal participant in the climate change debate in 2007. A former CEO of Telstra, in 2006 Switkowski was appointed by the Prime Minister to lead an inquiry into nuclear energy (The Uranium Mining, Processing and Nuclear Energy Review Taskforce), and was later appointed chair of the Australian Nuclear Science and Technology Organisation (Pearse 2007:263). Hamilton and Pearse also identify many other influential business leaders and professional lobbyists who, they argue, significantly shaped the Howard Government’s response to climate change, including:

- John Akehurst, director of CSL, and chairman of Alinta;
- Robyn Bain, CEO of the Cement Industry Federation;
- Malcolm Broomhead, CEO of chemicals and mining company Orica;
- Leigh Clifford, former CEO of Rio Tinto and current chairman of Qantas;
- John Daley, former CEO of the Australian Industry Greenhouse Network, and now lobbyist for Woodside, CSR and APPEA;
- Brian Fisher, lobbyist with CRA International;
- Mitch Hooke, CEO of the Minerals Council of Australia;

- Ron Knapp, CEO of the Australian Aluminium Council;
- Meg Macdonald, then general manager of corporate affairs at Alcoa (now the president of the Alcoa Foundation);
- Ian Nethercote, CEO of Loy Yang Power;
- John Tilley, executive director of the Australian Institute of Petroelum;
- Don Voelte, former CEO of Woodside Petroleum; and
- Sam Walsh, CEO of Rio Tinto's Iron Ore Group.

Hamilton (2007:3-15;112-64) and Pearse (2007:150-9;194-210;228-87) emphasise the power wielded by these and other business leaders and lobbyists and their close personal and professional ties with state and federal politicians in Australia.

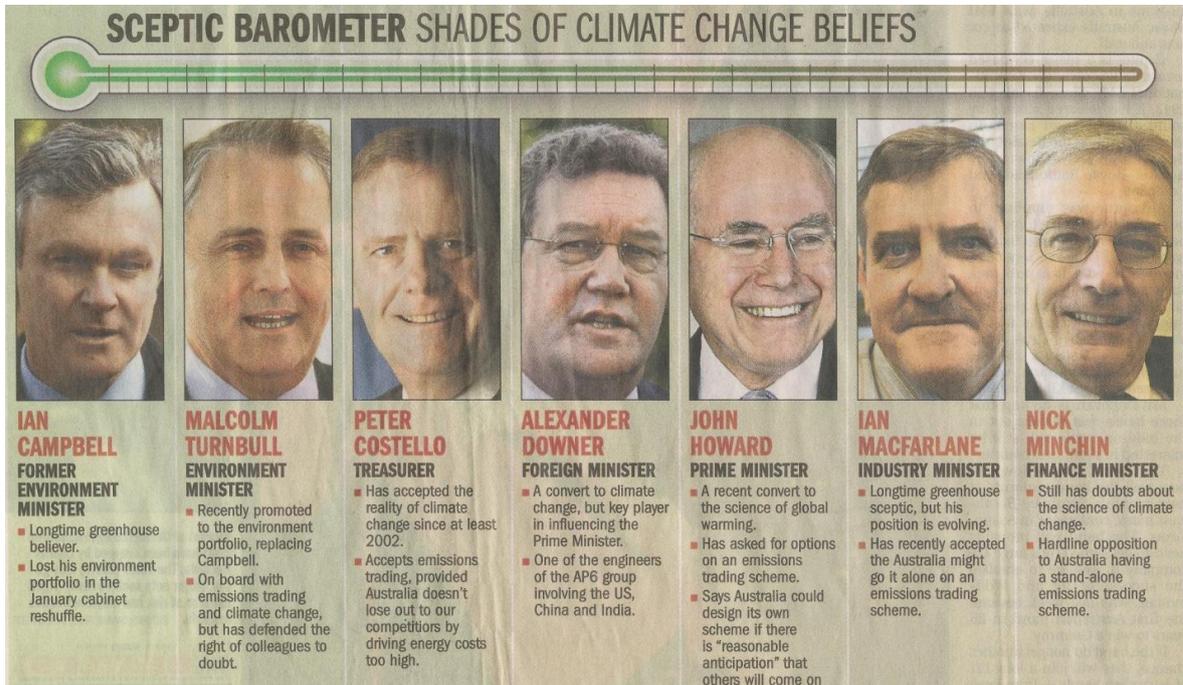
#### **8.2.4 Politicians**

A number of politicians actively participated in the discourse of climate change scepticism during 2007. The then Prime Minister John Howard's scepticism about the seriousness of climate change is well documented. "His strong views on climate change go way back. He has always been consistent on the issue: simply put: he doesn't believe it is serious" (Pearse 2007:139). This was of particular significance because Pearse asserted that:

Anyone who deals with the Howard government knows that John Howard makes its greenhouse policy. The environment minister, the industry minister, the foreign minister and the treasurer are merely on the mailing list (Pearse 2007:140).

During 2006, in the face of increasing public pressure, Howard sought to frame himself as a "climate change realist" (e.g. Baker 19 February 2007a). However, Pearse (2007:140) argues that Howard's scepticism about the environmental imperative didn't change, only his assessment of the political imperative. A widely reported incident in February 2007 highlighted Howard's ongoing scepticism. In the publicly televised parliamentary question time, Howard said he was not convinced of the link between greenhouse gas emissions and climate change. Although he returned much later that day to say he had misheard the question and had thought he was being asked about the link between emissions and the drought, it seems more likely that he had momentarily forgotten his recent 'conversion' (Peters 6 February 2007; Porteous and Madigan 6 February 2007).

Howard's sceptical position was supported by a number of senior Coalition MPs, including the then leader of the Nationals and Deputy Prime Minister, Mark Vaile, the then Minister for Finance, Nick Minchin and the Minister for Industry, Ian Macfarlane, as illustrated in Figure 8.1.



**Figure 8.1 Sceptic barometer: some key coalition politicians during 2007.** Source: Murphy (20 February 2007).

In February 2007 Minchin joined Russell Broadbent, Denis Jensen and various other MPs close to Howard in hosting the launch of Ray Evan's book *Nine Facts about Climate Change* at Parliament House (Murphy *et al.* 28 February 2007; Kerr 1 March 2007). Together with backbenchers Jacki Kelly, Dana Vale and David Tollner, Jensen also contributed to a dissenting report to a Coalition-led inquiry into carbon capture and storage, in which they disagreed with the majority report's "unequivocal support for the hypothesis that global warming is caused by man [*sic*]" (quoted in Topsfield 14 August 2007). Liberal insider Pearse (2007:129;143-5) also identified John Anderson, Ian Campbell (a former Environment Minister), Alexander Downer (then Foreign Minister), Greg Hunt, Ian Macfarlane (then Minister for Industry), Andrew Robb and Wilson Tucky as climate change sceptics. Even though he was not a climate sceptic himself, the then Minister for Environment, Malcolm Turnbull, also displayed ambivalence about the issue, "disparaging those, like Al Gore, who have sounded the alarm on climate change" (Gordon

10 February 2007). Scepticism was not confined to Coalition politicians with a number of Labor figures also participating in this discourse. Most notably, former Labor minister Peter Walsh became the president of the Lavoisier Group, with Dick Adams, Craig Emerson and Martin Ferguson other Labor sceptics quoted in the media in 2007.

### **8.2.5 Other Public Figures**

Finally, there were a number of prominent sceptics who did not fit into any of the categories described above. Possibly the most influential of these in Australia during 2007, was Martin Durkin, the film-maker whose documentary *The Great Global Warming Swindle* was broadcast on ABC Television in July 2007. Equally sceptical, Nigel Lawson, a former British Chancellor of the Exchequer gave widely publicised speeches at the New Zealand Business Round Table and the Institute of Public Affairs in November 2007. Other sceptics quoted or referred to included prominent philanthropist Dame Elizabeth Murdoch, former editor of *New Scientist*, Nigel Calder, former president of Greenpeace Patrick Moore, and Sydney's Catholic Cardinal George Pell.

### **8.2.6 Sceptic Organisations and Alliances**

While it was often difficult to ascertain the interests and motivations of individual sceptics, these were much clearer in relation to the groups and alliances with which many of the individuals described above were affiliated.

Several think-tanks have played a significant role in promoting climate change scepticism in Australia, including the Institute of Public Affairs (IPA), the Centre for Independent Studies (CIS), the Sydney Institute, and the APEC Studies Centre at Monash University. Pearse (2007:147) highlights the Liberal Party's long-standing links and close working relationships with these organisations:

Their arguments appear time and again in speeches and government documents, and provide much of the basis for John Howard's inaction... Ministers regularly give speeches and make major announcements at events organised by these groups (Pearse 2007:147-8).

While the motivations of these think-tanks are at least partly ideological they are also clearly embedded in the interests of the fossil fuel sector. Large mining companies like BHP and WMC were closely involved in funding the IPA, and it publicly acknowledged that if it didn't support its financiers' agenda, funding would cease. Similarly, the CIS readily acknowledged receiving funding from BHP, WMC Rio Tinto, Shell and Santos (Pearse 2007:199). Hamilton (2007:169) also notes the IPA's close links with a number of fossil fuel industry-funded sceptic organisations in the United States, including The Advancement of Sound Science Coalition, Tech Central Station, the Competitive Enterprise Institute and the Cooler Heads Coalition (See Hamilton 2007:128-132 for more about these organisations). In 2004 the IPA created its own environmental front group – the Australian Environment Foundation, which promoted the same arguments as the IPA: denying the seriousness of climate change and seeking to delay emissions cuts by Australia. Its board included at least one director of the biggest promoters of climate change scepticism in Australia: the Lavoisier Group (Pearse 2007:200).

The Lavoisier Group<sup>64</sup> was formed by Hugh Morgan and Ray Evans in 1999 ostensibly to bring rationality to a debate dominated by 'green extremism'. Since then it has "conducted a sustained campaign to muddy the waters on climate science and thereby support the [Howard] government's recalcitrant stance" (Hamilton 2007:141). It holds conferences, publishes papers, makes submissions, and flies world famous climate sceptics from abroad to present evidence in person at parliamentary inquiries (Pearse 2007:202). Hamilton (2007:143) argues that while "it is tempting to dismiss the Lavoisier Group as a bunch of crackpots", "its claims have undoubtedly influenced some Coalition ministers and back-benchers". As the most extreme voice in the debate, the financial links to the Lavoisier Group are less visible. Individual companies tend to be careful not to deny climate change publicly, so they avoid direct financial links with organisations that reject the science. However, Pearse (2007:203) argues that "when you pick apart the links, it is clear that virtually every expert cited by the Lavoisier Group and other think-tanks is directly or indirectly sponsored by large greenhouse polluters".

The Australian Industry Greenhouse Network (AIGN) is Australia's most influential fossil-fuel lobby group (Hamilton 2007:134). Members of the AIGN include the industry

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<sup>64</sup> Which takes its name from the founder of modern chemistry, Antoine-Laurent Lavoisier.

associations for aluminium, cement, chemicals, coal, electricity, motor vehicles, paper, petroleum, plastics and steel. Many large companies with a strong interest in the climate change debate are also members of the AIGN, including Alcoa, BHP Billiton, BP, Caltex, Chevron, CSR, Exxon-Mobil, Mitsui, Origin Energy, Rio Tinto, Santos, Shell Australia, Wesfarmers, Woodside and Xstrata. While publicly the AIGN has broadly accepted the scientific case that climate change is happening and is serious, they draw attention to alleged scientific uncertainties, and maintain a hardline stance against reductions in Australian emissions in the foreseeable future. In particular, they argued that Kyoto ratification or emission trading would have unacceptable impact on Australia's national competitiveness and would "condemn us to a depressingly low growth and low wealth future" (Daley 2006:5). They also warned that constraints on Australian emissions would lead to a loss of competitive advantage, forcing large industries like aluminium to leave Australia for other countries not subject to the same constraints (Pearse 2007:150-1). Both Hamilton (2007:134) and Pearse (2007:227-38) identify the AIGN as the organisational form of the "greenhouse mafia", a powerful lobby which exerted extraordinary influence on the Howard Government's climate change policy, with one of the AIGN's most senior figures admitting to drafting ministerial briefings, cabinet submissions and costings on issues relating to climate change in at least two federal departments (Industry and Treasury).

### **8.3 KEY LINGUISTIC AND RHETORICAL CHARACTERISTICS<sup>65</sup>**

The discourse of climate change scepticism was characterised by a number of lexical and rhetorical features. These included the use of a derogatory lexicon, religious metaphors, opposing lexical designations, the projection of authority, and the use of a colloquial vernacular.

#### **8.3.1 A Derogatory Lexicon**

Climate change sceptics employed a wide range of distinctive words and phrases to frame climate change, concern about climate change, and those concerned about climate change. These ranged from the dismissive and derisive to the denigrating and defamatory. The

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<sup>65</sup> As in Section 7.3, bold has been used to highlight key words and phrases in this section, in each case this emphasis has been added and does not constitute part of the original quote.

mildest of these were innocuous but strategic words and phrases that inject a degree of doubt and uncertainty about climate change. For example, Simper (9 August 2007) referred to “**alleged** global warming” and “**various** climate change **theories**”. Similarly, Lawson (30 November 2007) described carbon dioxide as “one of a number of **so-called** greenhouse gases”. In their dissenting report in response to a government lead enquiry, four coalition MPs, declared that “we disagree with the report’s unequivocal support for the **hypothesis** that global warming is caused by man – **so called** anthropogenic global warming” (Ryan 14 August 2007). While Walsh (in *The Age* 11 March 2007) argued that “increased (carbon dioxide) **may** be having some effect, but it is **negligible**”.

Another group of words and phrases used to dismiss concern about climate change centred around the premise that it is exaggerated. For example, *The Australian* editorial maintained that “Mr Gore has adopted the rhetoric of **zealotry** and **exaggeration**” (*The Australian* 29 March 2007b) and described *An Inconvenient Truth* as “**deliberate exaggeration**”, “**deliberately alarmist**”, “**fanciful**”, and “**overstated**” (*The Australian* 12 October 2007). Parbo argued that “**exaggerations and hype** do not survive the cold hard light of reality” (in Kerr 1 March 2007). In an interview on *Lateline* the then Industry and Resources Minister Ian Macfarlane asserted:

I guess what I am sceptical about is some of the more **exaggerated** claims that are being made about the connection between CO<sub>2</sub> emissions and climate change (Macfarlane on *Lateline* 30 April 2007).

Also expressing this kind of scepticism, the chair of the Queensland Land and Resource Tribunal dismissed attempts to force a new coalmine to reduce greenhouse gas emissions. The Queensland Conservation Council put to the tribunal that the Newlands extension would result in the emission of 84 million tonnes of carbon dioxide from the mining of 28 million tonnes of coal over 15 years. “But Mr Koppenol accused a key witness, Ian Lowe, of **exaggerating** aspects of climate change attributable to greenhouse gas emissions” (Koch 17 February 2007).

Another popular group of words and phrases used by climate change sceptics framed scientists and activists as doomsayers or scaremongers. For example, Ian Plimer (12 July 2007) described concern about climate change as “**doomsday hype**” created by “journalists, political pressure groups and those who will make a quid out of **frightening**

**us witless**” and “**dancing to the drumbeat of disaster**”. *The Australian* editorial dismissed Al Gore’s “**hyperbolic visions of doom**” (*The Australian* 29 March 2007b) describing *An Inconvenient Truth* as an “**apocalyptic vision**” (*The Australian* 12 October 2007). Similarly, Schembri (5 July 2007) derisively referred to “that **armageddon** scheduled to **doom** us all, courtesy of global warming” and Pearson (29 December 2007) declared that “fears over man-made emissions melting the ice caps and causing a wave of unprecedented disaster are nothing more than **scaremongering**.” Once again, this lexical choice was reflected in the political domain, with Prime Minister Howard stating in *Lateline* interview that:

I don’t think, with something like this, it’s wise to adopt the **doomsday scenario**. There have been plenty of examples in the past where those sorts of scenarios have been embraced and they haven’t been realised (Howard on *Lateline* 5 February 2007b).

Less colourful but perhaps more damning was the final group of words and phrases asserting that claims about climate change are unsupported and untrue. Norington (19 February 2007) accused Tim Flannery of making “**unsupported, even wild claims**”. Maley argued that:

For months – for years – the Australian public has been subjected to **an avalanche of fantastic forecasts** about the future of the world climate and its vicissitudes... A formidable and increasing body of knowledge shows many claims that have been uncritically accepted to be so **deeply flawed** that no rational government could seriously base any action on them (Maley 18 December 2007).

Kininmonth (10 February 2007) argued that “**There is no evidence** that climate extremes have become more frequent or increased in intensity”, while Cockburn (12 June 2007) insisted that any suggestion that there is scientific consensus about climate change “**is utterly false**”. These texts were invariably characterised by a failure to provide any supporting evidence to back the claims that climate change scientist and activists’ claims were unsupported. A rhetorical device often used by climate change sceptics in conjunction with this lexicon was the simple strategy of repeating key words several times to emphasise their point. For example, in her column, entitled *Now our children are being force-fed warming hysteria*, Albrechtsen (2 May 2007) used the word ‘hysteria’ five times. Similarly, in his opinion piece *Hostages to a hoax*, Durkin (7 July 2007) referred to climate change as a ‘theory’ no fewer than seven times.

### 8.3.2 Religious Metaphors

An interesting characteristic of the discourse of climate change scepticism was widespread use of religious metaphors, for example:

The link between releasing carbon gases into the atmosphere and the rise in global temperatures has become such a media **mantra** that to question it has become something akin to **sacrilege** (Schembri 5 July 2007).

Unfortunately, the early stages of the climate change debate had all the hallmarks of revolution. It started – badly – with Kyoto. Climate change was a moral issue. **Only the sinners did not sign up** (Albrechtsen 11 July 2007).

It would seem that within the context of Australia’s predominantly secular society, climate change sceptics constructed concern about climate change as religious in order to frame it as “overly pious, sententious and therefore non-factual” (Matheson 2005:16). There is no doubt that referring to those concerned about climate change as zealous or zealots was intended to be derogatory, as evident in the following quotes which are also sprinkled with other religious metaphors:

When I agreed to make The Great Global Warming Swindle, I was warned a middle-class **fatwa**<sup>66</sup> would be placed on my head... Why are the global warmers so **zealous**?... When you have a dig at global warming, you commit a grievous breach of social etiquette. Among the chattering classes you’re a **leper** (Durkin 21 July 2007).

I’m a realist. **True believers** have a touch of the **zealot** about them and sometimes are prone to exaggeration. I don’t think we should be into exaggeration, but I accept that the climate is changing. I guess, during the course of last year, I can’t put an exact time on it, it wasn’t a **Damascus Road conversion**, I’ve always accepted that greenhouse gas emissions, carbon emissions, were potentially damaging (Howard on *Lateline* 5 February 2007b).

It was surprisingly common for sceptics to refer to scientists and activists as religious and concern about the environment and specifically climate change as a religion:

Environmentalism has largely superseded Christianity as the **religion** of the upper classes in Europe and to a lesser extent in the United States... It is a form of **religious belief** which fosters a sense of moral superiority in the behaviour, but which places no importance on telling the truth (Evans in Murphy, Nicholson and Baker, 28 February 2007).

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<sup>66</sup> A fatwa is a formal legal opinion or ruling delivered by an Islamic religious authority in relation to a point of Islamic law (Soanes and Stevenson 2004)

An interesting inconsistency becomes evident within many of these texts. The authors used religious metaphors in a derogatory way, but then went on to say what people should or should not believe, or referred to their own “beliefs” as if whether climate change is happening or is serious *is* a religious issue or an issue about which beliefs are the defining criteria. For example, Simper argued that:

The ABC should diligently guard its credibility over alleged global warming and ancillary topics. To convert that into suitably **reverent** ABC language we should probably refer to the issue of climate change... Consume too much ABC television or radio and you might conclude global warming has become a **religion** (Simper 9 August 2007).

Only to go on to argue to that “people must of course, **believe** what they will” and position himself with “those, who deep in their bones, don’t **believe** global warming poses such a ghastly threat” (Simper 9 August 2007).

### 8.3.3 Opposing Lexical Designations

The discourse of climate change scepticism used two very different sets of adjectives and adverbs to characterise and distinguish between the proponents of climate change activism and climate change scepticism and their respective arguments. Many of those used to describe the former have been discussed above. To highlight the extent to which sceptics employed opposing lexical designations, Table 8.2 compares words and phrases climate change sceptics used to describe climate change activist Al Gore’s documentary *An Inconvenient Truth* with those used to describe climate change sceptic Martin Durkin’s documentary *The Great Global Warming Swindle*. The positional and relational discursive strategies that these opposing lexical designations sustained will be discussed further in Section 8.4, but one of the things the latter lexicon contributed to was the projection of authority.

### 8.3.4 The Projection of Authority

Many climate change sceptics used rhetoric to project authority, by claiming ownership of ‘the facts’, and using scientific jargon. Sometimes these were implicit assertions of fact achieved by omitting to refer to any uncertainty, doubt, or other possible explanations. However, in many cases sceptics explicitly labelled things as facts. For example, Walker

**Table 8.2 Comparing the words and phrases used by climate sceptics to frame two climate change documentaries.**

Words and phrases used to describe <i>An Inconvenient Truth</i>	Words and phrases used to describe <i>The Great Global Warming Swindle</i>
<ul style="list-style-type: none"> <li>- Alarmist</li> <li>- One sided</li> <li>- Littered with convenient untruths</li> <li>- Apocalyptic</li> <li>- Politically partisan</li> <li>- Not impartial (Smith and Warren 12 October 2007).</li> <li>- Untrue</li> <li>- Fanciful</li> <li>- Not supported by scientific evidence</li> <li>- Overstated</li> <li>- Deliberately alarmist</li> <li>- Deliberate exaggeration (<i>The Australian</i> 12 October 2007)</li> <li>- Flagrant propaganda (Leake 15 October 2007)</li> <li>- Fabrications (Moran 29 March 2007)</li> <li>- A Hollywood fiction film... that perpetrates a well-documented scientific fraud (Plimer 12 July 2007)</li> <li>- Hysteria (Albrechtsen 2 May 2007 )</li> <li>- Bull**** from beginning to end (Evans in Murphy, Nicholson and Baker 28 February 2007).</li> </ul>	<ul style="list-style-type: none"> <li>- Measured</li> <li>- Intelligent</li> <li>- Balanced</li> <li>- Outstanding</li> <li>- Sober</li> <li>- Intuitive</li> <li>- Breath of intellectual fresh air</li> <li>- Level headed</li> <li>- Impressive</li> <li>- Respected</li> <li>- Methodical (Schembri 5 July 2007).</li> <li>- Thought-provoking</li> <li>- Careful</li> <li>- Accurate</li> <li>- Accords with all the facts</li> <li>- Makes complete sense (Carter 10 July 2007)</li> <li>- High quality</li> <li>- Innovative</li> <li>- A principle relevant viewpoint (Dalton 25 May 2007)</li> </ul>

(19 January 2007) argued that “**The facts** point to natural factors... being behind climate change rather than human influence”, while Whitehouse (24 December 2007) asserted that “**The fact is** that the global temperature of 2007 is statistically the same as 2006 as well as every year since 2001”. Similarly, Durkin (7 July 2007) argued that:

The basic facts are as follows. There is nothing unusual about the present climate. The Earth has been far, far warmer than today and far, far colder. Our present interglacial (the mild bit between ice ages) is not nearly as warm as previous interglacials (Durkin 7 July 2007).

This tendency can be seen to constitute another internal inconsistency within the discourse of climate change scepticism. That is to say, these actors sought to discredit climate change scientists and activists by emphasising uncertainty and lack of evidence about the climate system, while simultaneously asserting certainty in relation to their own contrary claims, without providing any supporting evidence.

The second way climate change sceptics projected authority was through using quasi-scientific language, including a mixture of established facts and unsupported assertions. Durkin provided a good example of this kind of rhetoric:

CO<sub>2</sub> occupies a tiny proportion of the gases in the atmosphere. It is only a secondary greenhouse gas - water vapour is the main one - and greenhouse gases themselves form only one small part of the Earth’s climate system. CO<sub>2</sub> has demonstrably never driven climate in the past. (Examine the ice core data at [www.CO2science.org](http://www.CO2science.org)). If greenhouse gases were causing the temperature to rise, according to classic greenhouse theory, the rate of warming should be higher in the Earth’s troposphere (at least 10km up) than at the surface. But the opposite is true. All our satellite and balloon data tells us that the rate of warming was higher at the surface. In other words, observational data tells us, beyond any reasonable doubt, that greenhouse gas did not cause the recent warming (Durkin 7 July 2007).

It is true that CO<sub>2</sub> occupies a tiny proportion of the gases in the atmosphere. However, this is irrelevant in the context of the impact of carbon dioxide on average global temperatures, as discussed in Chapter 2. Importantly, Durkin, and others like him, did not provide explanations for key points on which their arguments depended, in this case why warming should be higher in the troposphere, and why greater warming at the Earth’s surface proves that greenhouse gases are not causing climate change. By using the possessive pronoun ‘our’, Durkin subtly claimed ownership over the satellite and balloon data he referred to.

He didn't mention who collected the data, or what *their* analysis found. Walker also cited ice core data without acknowledging who collected it or explaining how it supports his arguments:

Geological coring data shows that natural rises in carbon dioxide levels follow temperature changes rather than cause them, and that there is no direct correlation between temperature changes and fossil fuel use. The analysis of ice cores shows that past temperatures have been several degrees higher than now due to natural causes, and 11,500 years ago central Greenland temperatures increased by 7 degrees Celsius or more in a few decades, making the estimated 0.6-degree global increase over the past century seem trivial (Walker 19 January 2007).

Several days after the publication of Walker's opinion piece, two climate change scientists responded to his arguments in detailed opinion pieces of their own, providing evidence to contradict many of his claims and highlighting his misuse of statistics (Jones 1 February 2007; Fraser 5 February).

Plimer further confused readers by referring to a wide range of geological and astronomical phenomena not incorporated in climate change models, implying that these phenomena rather than greenhouse gas emissions explain climate change:

Computer models are models, albeit primitive. They are not predictions, they are not scenarios. They don't do clouds. They don't do turbulence. They don't do unseen submarine emissions of greenhouse gases. They deal only with greenhouse gas emissions from volcanos in times of little volcanic activity. They don't do starbursts, which have probable given us the greatest climate change on Earth. They don't do variations in cosmic ray fluxes, which produce clouds in the lower atmosphere. They don't do mountain building, plate tectonic and closing or opening of seaways which have profound effects on climate (Plimer 12 July 2007).

While clouds, turbulence and volcanoes are self-explanatory, most readers are unlikely to know what starbursts, cosmic ray fluxes and seaways are, let alone how they might influence climate change. They therefore need to decide whether Plimer knows what he is talking about, which is where his impressive scientific qualifications lent weight to his assertions.

### 8.3.5 A Colloquial Vernacular

Finally, the discourse of climate change scepticism was characterised by the use of a colloquial vernacular. Martin Durkin provided the best examples of this, using such expressions as “**that’s codswallop**”, “**cripes**”, and “**as sure as eggs is eggs**”. He declared:

This is not the first time scientists have talked **rubbish**. Absurd theories come and go in science all the time. A few years ago an ostensible consensus of scientists said one-third of the British population were about to **pop their clogs** because they had eaten dodgy hamburgers (the mad cow disease scare). Many scientists build whole careers **talking out of their hats** (Durkin 7 July 2007).

In a comparable style Walsh (in *The Age* 11 March 2007) argued that “it’s **rubbish** to suggest renewable energy sources could supply the necessary baseload power<sup>67</sup>”, and Robson and Davidson (11 May 2007) likened activists to “**shonky used car salesmen**”. Albrechtsen provided many more examples of this type of colloquial vernacular:

Phew, Live Earth is over. The seven concerts on seven continents featuring a bunch of jet fuel-addicted rock stars summed up the problem with much of the talk about climate change. Hypocrisy aside, the climate change rockers and other zealots would have us believe there is no problem more uniquely modern than climate change. When it comes to mapping out solutions to this most 21st century of problems, history can teach us nothing. We are on our own. Right? Well, actually, no. Wrong. Dead wrong... (Albrechtsen 11 July 2007).

Even more emotive, Pearson declared:

I bitterly regret that the Howard Government didn’t use the advantages of incumbency to stimulate a far better informed debate on climate change than we have seen so far. Watching the federal government poised to spend billions of dollars on a notional problem when there’s no shortage of real problems that need fixing, is wormwood and gall to me (Pearson 23 June 2007).

It is difficult to assess to what extent this use of colloquial and emotive language was a deliberate strategy, and if it was, what it was intended to achieve. Perhaps the goal was to be accessible to and representative of the person-on-the-street: easy to relate to, easy to understand and easy to empathise with, in contrast to the more formal and stilted language associated with the discourse of climate change science.

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<sup>67</sup>Hydro-electric schemes around the world and geothermal schemes in countries like Iceland have in fact been providing renewable baseload power for decades, while more recently solar thermal plants have provided another source of renewable baseload power (Diesendorf 2007).

## 8.4 DISCURSIVE STRATEGIES

Positioning strategies played a particularly prominent role in the discourse of climate change scepticism, which was unique in the extent to which it centred upon criticising and discrediting other actors and their viewpoints. At the same time, sceptics used relational strategies to frame themselves as rational, scientific, knowledgeable, noble and victimised.

### 8.4.1 Positioning Strategies

Sceptics devoted a considerable amount of time to framing climate change scientists, activists, and politicians seeking action on climate change in derogatory ways. Using the lexicon described in Section 8.3.1, sceptics constructed these actors as irrational and alarmist, motivated by money, lacking expertise, hypocritical, and generally the ‘villains’ within the climate change debate.

Perhaps the most popular positioning strategy used by climate change sceptics was framing those concerned about climate change as irrational and alarmist. Sometimes this was implied rather than stated. For example, Lawson (21 November 2007) argued that “At least in the richer countries of the world, we have rightly become more concerned with environmental issues. But that is no excuse for abandoning reason”, implying that those concerned about climate change have abandoned reason. Others are more direct, for example, Robson and Davidson (11 May 2007) argued that “full debate has been sabotaged by illogical alarmists.” Similarly, Bolt argued that “The alarmist case has been so promoted in Australia... It’s about time an alternative view was put...” (Andrew Bolt on *Lateline* 25 May 2007). Kininmonth (10 February 2007) referred to “alarmist global warming rhetoric”, while Walker (19 January 2007) maintained that “the alarmist view needs to be challenged and discussed in an open forum.” *The Australian* argued that:

A succession of public figures succumbed to climate change hysteria this week as if it were a contagion. Sufferers exhibited symptoms that included an inability to deal with facts and a propensity to offer wild surmises, to adopt irrational positions and to ignore practical solutions (*The Australian* 29 September 2007).

Climate change activists Al Gore and Tim Flannery were often singled out by sceptics as particularly alarmist (e.g. Norington 19 February 2007; Smith and Warren 12 October 2007; *The Australian* 12 October 2007).

The second way in which sceptics demonised scientists and activists was by casting aspersions about their motives, and in particular, framing them as motivated by money. For example, Duffy (25 December 2004) asserted “Green groups have invented this crisis to attract members and money. For the greens, no crisis means no cash.” This is a strategy often used by Durkin who argued that “No one dares speak against it for risk of being unpopular, losing funding and jeopardising careers” (Durkin in Dayton 12 July 2007):

Billions of dollars of public money have been thrown at global warming... There are scientists and journalists (a surprising number) who have built careers championing the cause. There’s more money going into global warming research than there is chasing a cure for cancer (Durkin 21 July 2007).

Norington (19 February 2007) concluded a scathing article about Tim Flannery by questioning his source of income and criticising him for earning up to \$50 000 from overseas speaking engagements. Cockburn agreed that “there’s money to be made”:

The overwhelming majority of climate computer modellers, the beneficiaries of the \$2 billion-a-year global warming grant industry, certainly believe in it but not necessarily most real climate scientists – people qualified in atmospheric physics, climatology and meteorology. Geologists are particularly sceptical (Cockburn 12 June 2007).

Here Cockburn also demonstrated the third positioning strategy used by climate change sceptics: framing scientists and activists as incompetent. He implied that the overwhelming majority of climate modellers are not *real* climate scientists. Durkin also sought to undermine the credibility of climate change scientists by questioning their competence:

I think non-scientists think scientists talk sense but there are large numbers of scientists who talk utter rot all the time, who build entire careers on talking rot and are never caught out (Durkin in Bodey 12 July 2007).

Schembri (5 July 2007) argued that “the most elementary principles of both journalism and science seem to have been abandoned on this subject”. Robson and Davidson (11 May 2007) framed the entire IPCC as scientifically incompetent, while Kininmonth (10

February 2007) accused it of “gross overstatement” and being unable “to identify that four numbers don’t add up”. This strategy was also used in relation to climate change activists. Norington (19 February 2007) declared that “Flannery draws together disparate facts, exaggerates and sometimes gets things wrong to support theories in areas of science where he lacks expertise”. Similarly, Moran accused Tim Flannery of “continually” talking outside his academic expertise, arguing that “he’s basically an alarmist and not very careful with the factual support for what he says” (Moran in Norington 19 February 2007). Moran’s statements are somewhat ironic given his own tendency to talk outside his area of expertise as an economist, making statements about whether climate change is occurring and what possible solutions are available, with very little support for what *he* says (e.g. Moran 29 March 2007; 26 October 2007; 20 November 2007). Moran also framed Nicholas Stern as incompetent arguing that *The Stern Review*:

...combined all the most extreme forecasts and some untenable discount rates... and has been comprehensively rebutted, most notably by a group of economists that includes former British chancellor of the exchequer Sir Nigel Lawson and former OECD luminary David Henderson (Moran 29 March 2007).

Another strategy used by climate change sceptics to undermine the credibility of activists was by framing them as hypocritical. Al Gore was undoubtedly the most popular target of this strategy. In February 2007 a think-tank called the Tennessee Centre for Policy Research obtained copies of Al Gore’s household power bill and revealed that the Gore’s used about 221 000 kWh in 2006, more than 20 times the national average. In a press release, they accused Gore of being hypocritical in his calls for people to reduce their energy consumption when his was so high (Pilkington 1 March 2007). Gore’s staff responded by explaining that all his energy came from solar-power, wind-power and other renewable sources, and that he offset all his emissions. But nonetheless, Gore’s personal energy use remained a theme within the discourse of climate change scepticism for the remainder of the year, with Solomon arguing that:

Judging by prominent global warming advocate Al Gore’s power bill, (20 times that of the average American), one may be forgiven for thinking such activists are perhaps more interested in reducing your consumption rather than their own (Solomon 9 May 2007).

Christy declared that “Al Gore’s carbon footprint would stomp my neighbourhood flat” (Christy 3 November 2007), while *The Australian* implied that in order to be credible Al Gore needed to emulate Mother Teresa!

Unlike his fellow Nobel laureate Mother Teresa, who remained in poverty while she tended the sick and destitute in Calcutta, Mr Gore built a mansion and joined the Hollywood jet-set, generating a one-man industrial-sized carbon footprint in the process, while he set about warning others to use less electricity (*The Australian* 2007 15 October 2007).

Al Gore was not the only activist accused of being hypocritical. Celebrity physicist and senate candidate for the Climate Change Coalition, Karl Kruszelnicki was also labelled “an environmental hypocrite” for owning a V8 Holden Monaro even though he traded in his Family’s Ford Territory for a Toyota Prius and installed solar panels which generate more energy than his home consumed (Wilson 2 November 2007). Others targeted the artists involved in the Live Earth concerts (e.g Albrechtsen 11 July 2007). Similarly, Swinford (25 June 2007) argued that Prince Charles’ extravagant lifestyle made his calls for action to address climate change hypocritical, and Topsfield (29 March 2007) emphasised the limitations of Nicholas Stern’s personal response to climate change.

Finally, in conjunction with the strategies described above, sceptics used a variety of constructions to frame scientists and activists as the villains within the climate change debate. Shanahan (29 December 2007) accused activists of “brainwashing” the public. Schembri (15 September 2007) framed Al Gore (and those concerned about climate change more generally) as conceited and self-righteous. Lawson (30 November 2007) framed scientists and activists as “wishing to stifle discussion.” Oxley (29 May 2007) implied that activists show no “interest in the poor”, while Smith and Warren (12 October 2007) described Al Gore as deliberately telling untruths. Once again, Durkin provided perhaps the most colourful and extensive range of adjectives, characterising climate change scientists and activists as “aggressive”, “backward-looking”, “defensive”, “ferocious”, “intolerant”, “not interested in real debate”, “prejudiced”, “reactionary”, “vehement”, and “bigoted” (Durkin 7 July; 21 July 2007).

### 8.4.2 Relational Strategies

The relational strategies used by climate change sceptics tended to directly oppose those described in the previous section, with sceptics framing themselves as sensible, motivated by an honest desire to present the truth and uphold the principles of the scientific method, knowledgeable, eminent, and simultaneously the heroes and victims within the climate change debate.

The first relational strategy used by climate change sceptics was to frame themselves as rational or sensible. Thus Walker (19 January 2007) described himself (and other sceptics) as “rational, independent observers”. Similarly, Albrechtsen sought to provide “some sensible talk about climate change”. Sceptics, Albrechtsen maintained, have a firm grasp on reality. In fact, she went so far as define what does and does not constitute reality:

Live Earth was promoted as yet another episode in raising awareness on climate change. We needed that like a hole in the head. Instead of repeating dire predictions about the future, a better goal would have been to educate people about the real world. About the social and economic realities confronting the real world. Realities such as poverty (Albrechtsen 11 July 2007).

In this text, Albrechtsen strongly implied that climate change is not a reality, and does not have implications for the real world, a message she drove home by using the words real, reality and realities no fewer than 10 times. Catholic Cardinal Pell also claimed ownership of reality for sceptics:

Church leaders in particular should be allergic to nonsense. I am certainly sceptical about extravagant claims of impending man-made climatic catastrophes. Uncertainties on climate change abound... my task as a Christian leader is to engage with reality, to contribute to debate on important issues, to open people’s minds, and to point out when the emperor is wearing few or no clothes (Pell in Rowbotham 25 October 2007).

Sceptics also claimed ownership of the scientific approach, and such attributes as “recognising uncertainty and challenging assumptions” (Albrechtsen 2 May 2007), and taking a “balanced, critical” and “scientific, evidence-based approach to climate change” (*The Australian* 12 October 2007). Whitehouse argued that sceptics are fulfilling the important criteria that scientists to be independent of politics:

I have heard it said, by scientists, journalists and politicians, that the time for argument is over and that further scientific debate only causes delay in action. But the wish to know exactly what is going on is independent of politics and scientists must never bend their desire for knowledge to any political cause, however noble (Whitehouse 24 December 2007).

Carter (10 July 2007) also claimed all that is noble about science as belonging to sceptics:

Science is not about the triumph of the weight of numbers, nor about consensus, nor about the will of the social majority. An idea such as the greenhouse hypothesis is validated not by shouting but by experimental and observational testing and logical analysis. And note especially that a hypothesis doesn't care who believes in it, right up to and including environment ministers, heads of state and presidents of distinguished scientific academies. Rather, science requires that to be successful a hypothesis only needs to be clearly stated, understandable, have explanatory power and withstand testing.

He went on to liken documentary maker Martin Durkin to Albert Einstein and other legendary scientists:

It takes one person, not an army, to accomplish that, and the names of those individuals pass down through history: Charles Darwin, Wilhelm Roentgen, Marie Curie, Albert Einstein, Robin Warren-Barry Marshall and their like, mavericks one and all. God bless them and Martin Durkin... what a service he has rendered (Carter 10 July 2007).

Warren provided another example of casting sceptics as noble in their pursuit of the truth, referring to Karl Popper's falsifiability principle, he argued, "Only by continually challenging scientific theories do we make progress" (Warren 2 October 2006). Warren acknowledged that sceptics could be wrong, but praised the invaluable part they were playing in the process of finally getting to the truth (Warren in Hamilton 2007:200).

The third relational strategy used by climate change sceptics was framing themselves and their fellow sceptics as knowledgeable and eminent participants in the climate change debate. Thus the *Quadrant* editorial argued that:

The knowledgeable and well-qualified sceptics of the phenomenon should always be valued since they are playing an indispensable role in questioning and refining the conclusions of other experts (*Quadrant* 2007).

Albrechtsen (2 May 2007) declared that "some eminent scientists are suggesting other reasons for global warming... Indeed, some point to evidence that the world may undergo

global cooling”. Schembri (5 July 2007) also referred to an “impressive array of respected climate scientists, academics and environmental activists” supporting climate change scepticism, a position reiterated by the then Finance Minister, Nick Minchin:

Senator Minchin said that respected climatologists and geologists had “significant doubts about what the IPCC is saying, and they (the IPCC) are only saying that (human induced climate change) is very likely, they themselves concede there is some doubt” (Murphy 17 February 2007).

As evident in these quotes, authors tended to omit these expert’s names and qualifications. In instances they are named, their area of expertise is usually omitted or obscured, and as discussed in Section 8.2.2, they are not generally climate scientists or climatologists, but scientists with qualifications in other areas, or not scientists at all.

The fourth and fifth relational strategies used by sceptics were closely interlinked. Sceptics simultaneously framed themselves as the heroes and victims within the climate change debate. Not only were they heroic in their pursuit of the scientific approach as described above, they claimed to occupy the moral high-ground in framing themselves as championing the poor and needy. Thus Schembri (5 July 2007) praised *The Great Global Warming Swindle* for delving into “the immorality of the developed world imposing strictures upon the developing world”. As discussed in Section 8.1.4, Christy also claimed the moral high ground, implying that he cared about poor people while those advocating action on climate change don’t (Christy 3 November 2007).

Above all though, sceptics framed themselves as heroic in the face of sustained and unjust victimisation. Perhaps climate change sceptics’ favourite relational strategy was framing themselves as beleaguered victims. Walker (19 January 2007) lamented the “vilification of contrary views of global warming”, while a scathing editorial in *The Australian* (14 July 2007) accused *Lateline* host Tony Jones of eviscerating Durkin’s argument, while giving Al Gore and Nicholas Stern a much less critical reception. Albrechtsen argued that:

Even conservative politicians shy away from suggesting scepticism because anyone who is a sceptic is labelled a denier. If you disagree with some of the science, and the religious fervour it has fuelled, or even evince a level of agnosticism towards it, you are not just wrong. You are a bad person forced to defend your integrity as well as your arguments (Albrechtsen 2 May 2007).

Maley was even more explicit, arguing that:

Government and media have acquiesced in the dissemination of fear-mongering along with abuse and intimidation levelled at those who have sought to raise a dissenting voice. Eminent and respected scientists and the writers who make known their findings have regularly had their motives impugned when they have spoken out in protest (Maley 18 December 2007).

While Wood deplored the:

... deliberate attempt to close down any public debate on climate change issues and brand those questioning the orthodoxies of the IPCC as climate change deniers, comparing them with Holocaust deniers or painting them as in the pay of big oil, big coal, or some other vested interests (Wood 29 August 2007).

An argument that Pearse's (2007) extremely detailed and well-supported research exposing the links between prominent climate change sceptics and oil, coal and other vested interests makes quite ironic.

## **8.5 KEY CONSTRUCTIONS OF CLIMATE CHANGE**

The discourse of scepticism supported a number of different constructions of climate change, including climate change as an unsubstantiated theory, a fallacy, a hoax, and a conspiracy.

### **8.5.1 An Unsubstantiated Theory**

Climate change sceptics of almost all persuasions contributed to the construction of climate change as unsubstantiated theory (e.g. Cockburn 12 June 2007, Pearson 23 July 2007; Simper 9 August 2007; Lawson 21 November 2007). It was particularly promoted by sceptics who maintained that it is not known and/or not possible to know whether climate change is happening, that climate change is not happening or that climate change is not caused by humans. For example, Christy (3 November 2007) argued that "we don't find the alarmist theory matching observations", while Whitehouse (24 December 2007) referred to climate change as "a working hypothesis", and "insufficient explanation for what is going on". Kelly, Vale, Tollner, and Jensen also contributed to this construction, describing climate change as "an unsubstantiated hypothesis" (in Topsfield 14 August

2007). Durkin (7 July 2007) variously referred to climate change as “an erroneous theory”, “a wild, eccentric theory”, and “absurd theory”, later concluding “the whole damned theory is in tatters” (Durkin 21 July 2007). Pearson (23 July 2007) also described climate change as “a theory” constructing it as “a hypothetical threat – which has got a lot of people vaguely worried about something that may well never materialise”. While Maley (18 December 2007) constructed climate change as both “unproven” and “deeply flawed”.

### **8.5.2 A Fallacy**

The construction of climate change as a fallacy also played a prominent role in the discourse of climate change scepticism. It was particularly popular among sceptics arguing that climate change is not happening or is not caused by humans. These sceptics used the derogatory lexicon described in Section 8.3.1 to frame the issue as ludicrous nonsense:

It’s all codswallop. The notion of man-made global warming started life as a wild, eccentric theory, and, despite throwing billions of dollars at it, scientists have failed to stand it up. Man-made global warming is unmitigated nonsense (Durkin 7 July 2007).

The more one examines the current global warming orthodoxy, the more it resembles a Da Vinci code of environmentalism. It is a great story and a phenomenal bestseller. It contains a grain of truth and a mountain of nonsense (Lawson 21 November 2007).

Of particular note is the issue of the effect the sun has on Earth’s climate, and how the suggestion that it would be overwhelmed by human activity is patently ludicrous (Schembri 5 July 2007).

As we have seen, Kininmonth (10 February 2007) was even more direct in his assertion that climate change is “an impossible proposition”. Meanwhile, then Finance Minister Minchin constructed climate change as a false alarm comparable to other unfulfilled forecasts that had been made in the past:

It shouldn’t been seen as sin to be cautious about this issue when we have seen, just in our lifetimes, global panics about nuclear destruction, Y2K, we were all going to run out of food, we were all going to run out of oil. In the 1970s when I was at university there was a panic about global cooling (Minchin in Murphy 17 February 2007).

Schembri (18 July 2007) used satire to undermine concern, constructing climate change, and “the debate over whether man-made carbon gas emissions are having a detrimental influence” as:

The most boring topic of conversation on earth... the topic most likely to prompt people into feigning heart attacks... and the topic of choice for people who want their dinner party to finish early.

### 8.5.3 A Hoax

Many climate change sceptics went beyond dismissing climate change as nonsense, constructing it as a deliberate hoax perpetrated by scientists and activists. For example, former mining executive Ray Evans declared “the global warming scam has been, arguably, the most extraordinary example of scientific fraud in the post war period” (Evans in Murphy *et al.* 28 February 2007). As discussed in Section 8.4.1 many sceptics accused scientists of making up climate change to generate funding for their research, contributing to the construction of climate change as an elaborate hoax, “Some of those in the scientific community generating panic about climate change, are doing so to secure funding for their own projects” (Enker 12 July 2007).

This construction was strongly promoted by Martin Durkin’s documentary *The Great Global Warming Swindle*, which argued that climate change is “a hoax perpetuated by a conspiracy between scientists and left-wing dominated media” (Ricketson 12 July 2007). “According to Martin Durkin... global warming is a hoax foisted upon an unsuspecting public by conspiratorial environmentalists” (Hughes 2 June 2007). The broadcast of the documentary on the ABC in June resulted in the widespread dissemination of this construction in the media more broadly. For example, in the cover story to *The Age’s* TV guide Minchin (12 July 2007) began:

Climate change is a big hoax – and the new media, most of the world’s scientists and even former British Prime Minister Margaret Thatcher are all in on it (Minchin 12 July 2007).

While Minchin went on to explain that this is the argument of *The Great Global Warming Swindle*, and later presented alternative viewpoints, the opening of her article nonetheless perpetuated Durkin’s construction to some extent.

#### 8.5.4 A Conspiracy

Martin Durkin was also perhaps the most prominent proponent of the construction of climate change as a political theory. He argued that climate change is “first and foremost a political theory... people on the Left tend to believe it. People on the Right tend not to” (Durkin 7 July 2007; 21 July 2007). Plimer concurred that “it’s a zealous form of Western politics intertwined with poor theology, poor economics and poor logic” (Plimer 2007). Enker (12 July 2007) added that that “the whole issue has been politicised and hijacked by disaffected lefties looking for a cause”. Others agreed that it’s a left-wing cause (e.g. Albrechtsen 26 September 2007), while Cockburn argued that climate change spans the entire political spectrum:

The clique endorsing what is now dignified as ‘the mainstream theory’ of global warming stretches all the way from radical greens through Al Gore to George W. Bush, who signed on at the end of May. The Left has been swept along, entranced by the allure of weather as revolutionary agent, naively conceiving of global warming as a crisis that will force radical social changes on capitalism (Cockburn 12 June 2007).

Albrechtsen (2 May 2007) also suggested that climate change represents an anti-capitalism conspiracy, expressing particular scepticism about the way the climate change agenda is “coalescing with the anti-globalisation, and anti-capitalism movements”. Pearse also observed the tendency for sceptics to construct climate change as “a socialist plot to hijack free markets” (Pearse 2007:148). Durkin argued that the mainstream view on climate change is a scam and the result of a worldwide industry created by “fanatically anti-industrial environmentalists”, and driven by scientists who want funding and a complicit media (quoted in Frew *et al.* 25 May 2007), asserting that climate change represents a “middle-class aesthetic revulsion of consumer industrial society” (Durkin 7 July 2007):

Global warming... is an expression of a whole middle-class political world view. This view is summed up in the oft-repeated phrase “we consume too much”... All this backward-looking bigotry has found perfect expression in the idea of man-made climate disaster. It has cohered a bunch of disparate reactionary prejudices (anti-car, anti-supermarkets, anti-globalisation) into a single unquestionable truth and cause (Durkin 21 July 2007).

In contrast, Schembri argued that far from being anti-consumerist, climate change is a conspiracy to promote consumerism:

The global warming debate is all just an elaborate ruse designed to sell stuff... those who subscribe to the prophecy of global warming automatically commit themselves to purchasing a vast array of expensive products, whereas sceptics don't have to buy anything (Schembri 18 July 2007).

Which perhaps illustrates something of the absurdity inherent in the discourse of climate change scepticism. It appears that sceptics would try arguing almost anything. It is indeed tempting, as Hamilton (2007:143) suggests, to dismiss most if not all of these actors as "crackpots". But the discourse of climate change scepticism has proven to be an influential factor in the climate change debate in Australia. While Australia's failure to adequately address climate change certainly cannot be blamed solely on climate change sceptics, it can be seen in part as a measure of their success in promoting uncertainty and seeking to delay action.

## CONCLUSION

This chapter analysed the discourse of climate change scepticism in Australia during 2007. It encompassed a range of different arguments. Some sceptics argued that it is not known, and not possible to know, whether climate change is happening because the climate system is too complex to fully understand. Others insisted that climate change is *not* happening, amplifying scientific uncertainty about aspects of climate change, and focusing on conflicting scientific viewpoints and allegedly contradictory data. The unambiguous evidence presented by the IPCC during 2007 made these arguments increasingly untenable and as a consequence, some climate change sceptics accepted the evidence that climate change is happening, arguing instead that it is a natural process and not caused by humans. Two further arguments were shared by almost all climate change sceptics, who agreed firstly, that climate change is not serious, and secondly, that we cannot and/or should not do anything about it.

These arguments were promoted by a wide variety of different actors. Journalists played a vital role in sustaining the discourse through the media, particularly in *The Australian* which regularly published articles and editorials promoting climate change scepticism. These journalists often quoted and referred to a relatively small number of sceptic experts; academics and researchers affiliated with think-tanks and other organisation, many of whom were found to have close links with industry or industry-funded groups. Business

representatives also played a very active role in the discourse of climate change scepticism. In particular, Hamilton (2007:315) and Pearse (2007:150-9) highlight the influence of the “greenhouse mafia,” a group of powerful business leaders who penetrated the highest levels of government decision making. Many Coalition and some Labor politicians also actively participated in the discourse of climate change scepticism. During 2007 Prime Minister Howard did his best to distance himself from the discourse, but forgot his conversion to ‘climate realism’ on a number of occasions and continued to use the linguistic and rhetorical devices and discursive strategies associated with the discourse throughout 2007. British film maker Michael Durkin also brought the discourse to prominence through his controversial documentary *The Great Global Warming Swindle*. Finally, a number of highly influential sceptic organisations and alliances with links to the fossil fuel sector were active within the climate change debate during 2007.

These actors used several unique linguistic and rhetorical devices to communicate their key arguments and messages. These included a distinctive lexicon which was used to frame climate change and those concerned about climate change in derogatory ways. Also popular was the use of religious metaphors and a colloquial vernacular. At the same time, opposing lexical designations were used to frame climate change activists and sceptics in contrasting ways and contributed to sceptics’ projection of authority. Positioning and relational strategies played a prominent role in the discourse of climate change scepticism. In particular, sceptics framed climate change scientists and activists as irrational, alarmist, corrupt, incompetent and hypocritical. Conversely, they framed themselves as rational, scientific, knowledgeable, noble and victimised. Key constructions promoted by the discourse included climate change as an unsubstantiated theory, a fallacy, a hoax and a conspiracy.

## Chapter 9: Assessing the Influence of Discourses and Considering Options for Addressing Climate Change

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### INTRODUCTION

Chapters 7 and 8 explored the key features of the discourses of climate change activism and climate change scepticism. This chapter seeks to fulfil the third and fourth stages of discourse analysis described in Chapter 5 by assessing the relative influence of these discourses within the climate change debate in Australia during 2007, and considering how they constructed potential options for addressing climate change. In doing so, it will address the final research question posed by this thesis: how are different options for addressing climate change constructed?

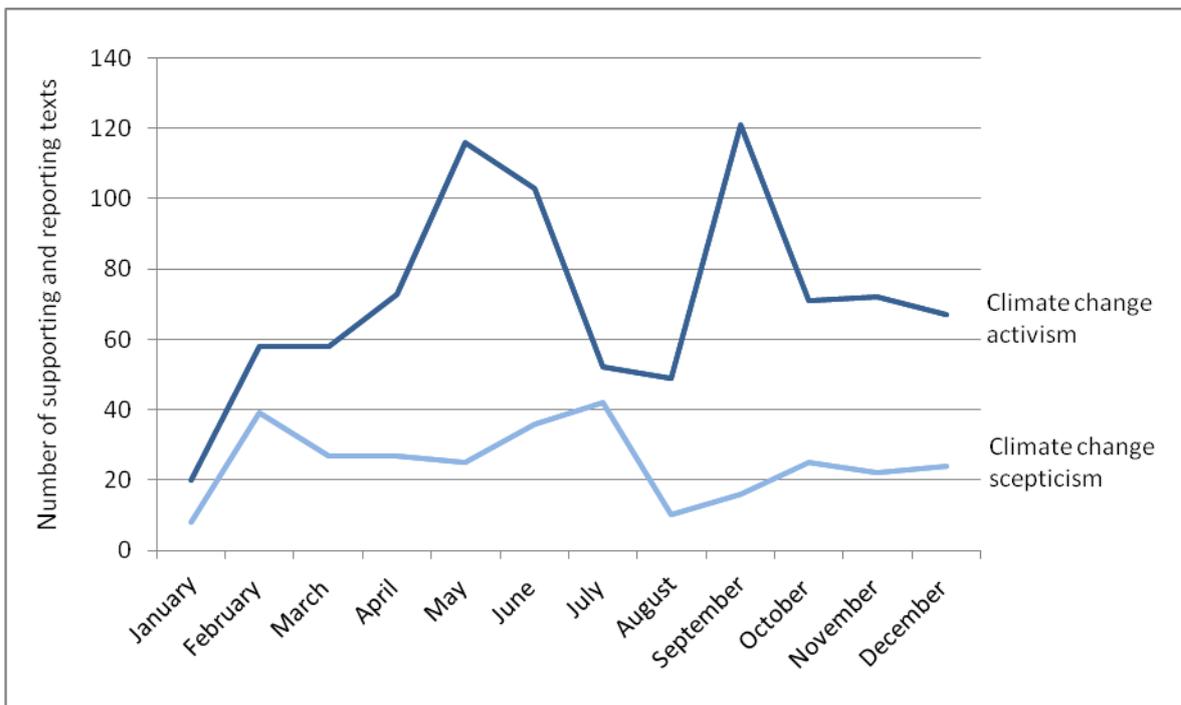
Section 9.1 will consider the relative influence of the discourses of climate change activism and climate change scepticism. First, the number of texts supporting and reporting each discourse during 2007 will be assessed. Next, the degree of prominence accorded to the two discourses within the media will be examined by considering the number of front page stories, feature stories and editorials reporting and supporting each discourse. The extent to which they appear to inform public opinion and political and business responses will then be discussed.

One of the main differences between discourses on climate change and the competing constructions they promote is how they frame what should (or shouldn't) be done to address the issue. As such, section 9.2 will examine the strategies and devices used by participants in the climate change debate to define appropriate options for addressing climate change. First, attention will be paid to the ways the discourses construct international agreements to address climate change, including the Kyoto Protocol, the Asia Pacific Partnership on Clean Development and Climate and APEC. Two potential domestic frameworks for reducing emissions, a carbon tax and carbon trading, will then be considered. Finally, calls for improving efficiency and reducing energy consumption will be examined.

## 9.1 ASSESSING THE RELATIVE INFLUENCE OF DISCOURSES

### 9.1.1 The Quantity of Reporting and Supporting Texts

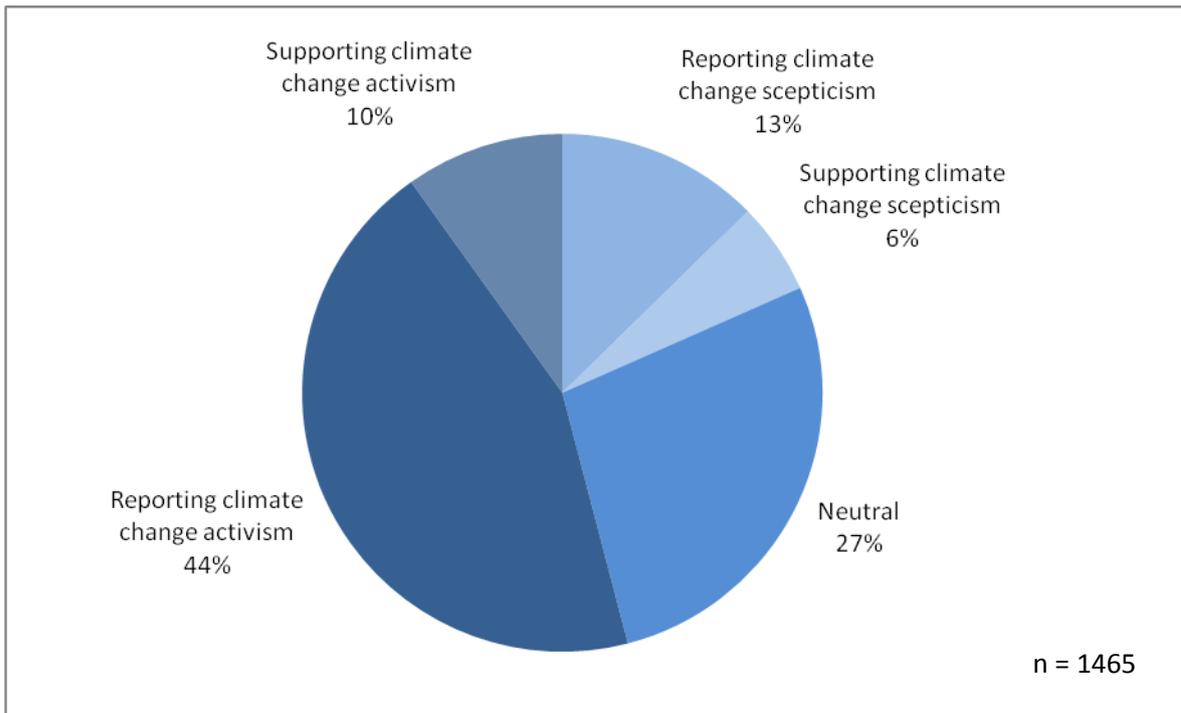
As discussed in Chapter 5, one possible measure of the influence of a discourse is the number of reporting and supporting texts. Reporting texts dedicate time and/or space to describe the position or perspective of a particular discourse (or more than one discourse), while supporting texts are those that can be seen to be situated within or actively promoting a particular discourse. Both the discourse of climate change activism and climate change scepticism were sustained through the media throughout 2007, as shown in Figure 9.1 which depicts the number of texts reporting and supporting each discourse over the course of the year.



**Figure 9.1** The number of media texts reporting and supporting the discourses of climate change activism and climate change scepticism during 2007 by month.

As evident in Figure 9.1, there were considerable spikes in the media coverage of each discourse. In particular, the IPCC's release of the findings of its Working Group III in May saw a surge in texts reporting and supporting the discourse of climate change activism. A range of events including the APEC Summit and Al Gore's visit to Australia also saw the coverage of climate change activism peak in September, while the broadcast of Martin

Durkin's documentary *The Great Global Warming Swindle* saw coverage of the discourse of climate change scepticism peak in July. Overall, there were significantly more media texts reporting the discourse of climate change activism than climate change scepticism during 2007. The number of media texts supporting climate change activism also exceeded those supporting climate change scepticism, although by a smaller margin, as shown in Figure 9.2.



**Figure 9.2 The proportion of media texts reporting and supporting the discourses of climate change activism and scepticism during 2007<sup>68</sup>.**

In total, only 19% of media texts reported or supported the discourse of climate change scepticism. However, it will be argued that the discourse was disproportionately influential within the climate change debate in Australia during 2007.

### 9.1.2 The Degree of Prominence accorded to Discourses

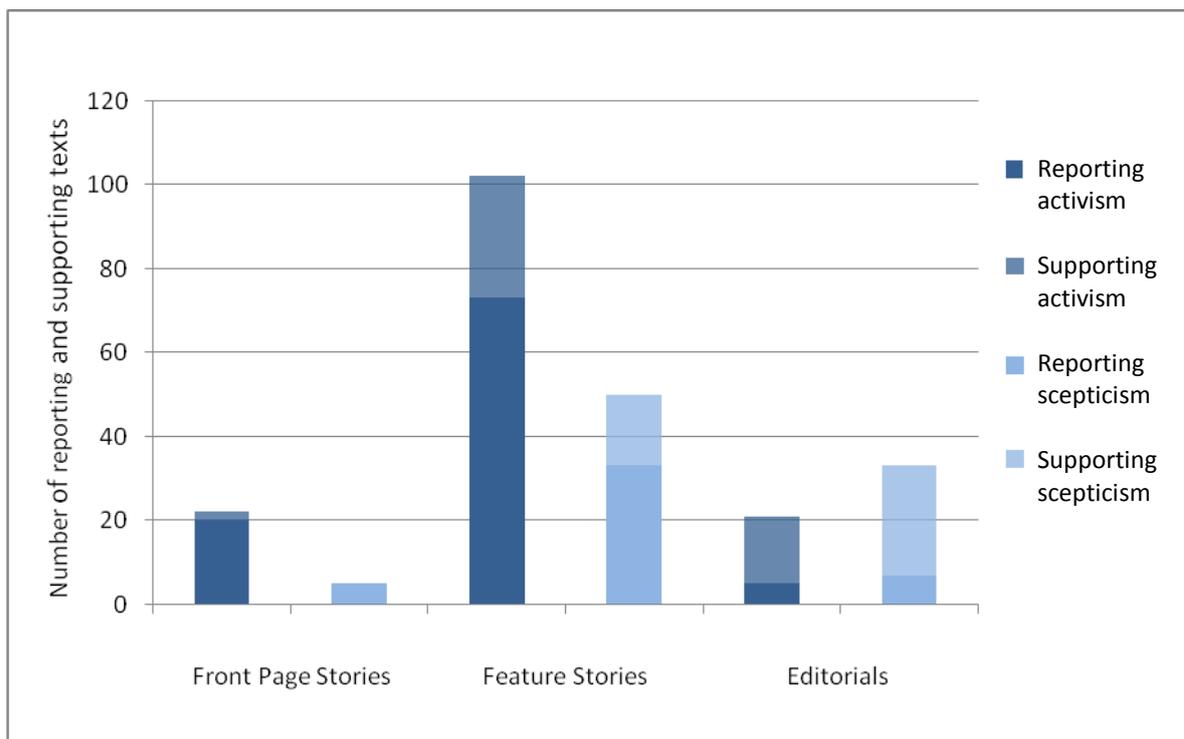
What the quantity of reporting and supporting texts does not capture is the prominence accorded to the different discourses. For example, just one front page story is likely to have a greater impact than several small articles deep within a newspaper. This section will

<sup>68</sup> Neutral texts referred to climate change or some aspect of climate change without reporting or supporting either discourse.

therefore consider the relative prominence accorded to the discourses of climate change activism and scepticism respectively.

*The prominence of climate change activism*

During 2007, the discourse of climate change activism achieved unprecedented prominence, featuring in many front page stories, feature stories and editorials, as shown in Figure 9.3.



**Figure 9.3 The number of front page stories, feature stories and editorials reporting and supporting the discourses of climate change activism and climate change scepticism during 2007.**

Events that brought particular prominence to the discourse of climate change activism through front page stories during 2007 included the release of the IPCC reports, Nicholas Stern’s visit to Australia, the Live Earth concerts, the Walk Against Warming marches, and the UNFCCC conference in Bali. As discussed in Chapter 7, *The Age* published 16 activist editorials during 2007. It also ran a number of series about climate change including “The Weather Watchers Series” which described the work of climate change scientists (e.g. Minchin 2 February 2007; Chandler 3 February 2007), and “The Politics of Climate

Change Series” which critically examined the government’s response to climate change (e.g. Murphy 17 February 2007; Baker 19 February 2007a). *The Age* also accorded prominence to the discourse of climate change activism on a number of occasions, through grouping numerous short to medium supporting articles, graphs, tables and textboxes together under a common banner. The use of bold headlines and large colour photographs further increased the prominence of the discourse of climate change activism in articles within *The Age*.

### *The prominence of climate change scepticism*

During 2007, many commentators downplayed the prominence of the of discourse climate change scepticism. For example, Minchin (3 February 2007) declared that “the debate has moved on. It’s no longer about whether climate change is real, but what we do about it”. Others agreed:

While sceptics are continuing to assail global warming science, politically, the battle is over. Global warming has become a political fact much more quickly than the sceptics could have imagined, and it is now driving policy agendas worldwide, and through them, business agendas (Maiden 12 March 2007).

The era of climate change scepticism is well and truly over. International public awareness about the reality and implications of global warming is at unprecedented levels (*The Age* 1 December 2007).

However, as illustrated in Figure 9.3, climate change scepticism did feature prominently in the media during 2007, reported and supported in numerous front page stories, feature stories and editorials. As discussed in Chapter 8, many media texts further amplified the discourse of climate change scepticism by emphasising conflicting views and presenting scientific and sceptical positions as equal and opposing sides in the debate, a tendency observed within the US media by Boykoff and Boykoff (2004:126-7) and Antilla (2005:320).

Roberts (14 December 2007b) provides just one example of a journalist presenting a climate change sceptic’s casual comments as an alternative viewpoint to peer-reviewed research, in this case a journal article about the impact of climate change on the Great Barrier Reef published in *Science*. Bob Carter, the sceptic he interviewed, had not even read the article in question but was nonetheless quoted at length:

Climate change sceptic Bob Carter, a James Cook University researcher, said while he was not familiar with the Science paper, caution needed to be exercised about “alarmist” climate modelling. “Too often these climate models are basically PlayStations which have not been validated scientifically,” Dr Carter said... (in Roberts 14 December 2007b).

Sometimes media texts gave prominence to climate change scepticism by what was omitted rather than what was included. For example, during October 2007 *The Australian* ran a series of articles and editorials about a British court case in which Stewart Dimmock, a school board member, took legal action to challenge the educational authorities’ distribution of *An Inconvenient Truth* within British schools. Smith and Warren (12 October 2007) asserted that:

Al Gore’s award-winning climate-change documentary has been exposed by Britain’s top court as alarmist, one-sided and littered with nine convenient untruths (Smith and Warren 12 October 2007).

While *The Australian* editorial reported that:

A British judge of the High Court... found that that the “apocalyptic vision” presented in the film was not an impartial analysis of climate change but part of a politically partisan crusade (*The Australian* 12 October 2007).

It was only several days later that it emerged that Dimmock was backed by prominent climate change sceptic Christopher Monckton who has financial links to the right-wing Washington think tank, the Science and Public Policy Institute (Leake 15 October 2007). Nor did *The Australian* report the Judge ruled *An Inconvenient Truth* to be “broadly accurate”, and that Dimmock was awarded only two-thirds of his costs leaving him to pay \$135 000 (Leake 15 October 2007).

Even greater prominence was accorded to the discourse by the ABC’s broadcast of Martin Durkin’s documentary *The Great Global Warming Swindle* in July 2007. Articles triggered by the documentary began appearing as early as May and continued until October 2007. Amid considerable controversy about the documentary’s credibility, a number of senior ABC staff endorsed the validity of the discourse of climate change scepticism. For example, Kim Dalton ABC TV director argued that “there is no doubt that there is still the opinion out there that questions the connection between global warming and CO<sub>2</sub> emissions” (Dalton in Kleinman 25 May 2007). Sometime later he added:

There is no doubt that global warming sceptics are very much in the minority. But they are a very vocal minority. They still have support among some high-profile commentators and among some in the scientific community (Dalton in Ricketson 12 July 2007).

Similarly, the ABC's managing director Mark Scott argued:

I don't think it is inappropriate to air a documentary that asks if we are overreacting. We back the intelligence of our audience and encourage a full range of viewpoints (Scott in Cauchi 8 July 2007).

Climate change scepticism also achieved prominence through the statements of high profile politicians during 2007 particularly the Prime Minister John Howard, the Leader of the Nationals and Deputy Prime Minister, Mark Vaile, and the Minister for Finance, Nick Minchin (e.g. Murphy 17 February 2007). As discussed in Chapter 8, in February 2007, Minchin joined Russell Broadbent, Denis Jensen and various other MPs in hosting a launch of Ray Evan's book *Nine Facts about Climate Change* at Parliament House, giving rise to several front page stories. Nigel Lawson, a former British Chancellor of the Exchequer also brought the discourse of climate change scepticism to prominence through his widely publicised speeches at the New Zealand Business Round Table and the Institute of Public Affairs in November 2007.

### **9.1.3 The Extent to which Discourses Appear to Inform Public, Political and Business Responses**

#### *Public opinion*

There is strong evidence to suggest that the discourse of climate change activism informed public opinion on climate change during 2007. A number of high profile public opinion polls reported significantly increased public concern about the impact of climate change and support for action. For example, a poll conducted by World Public Opinion in 2007 suggested that Australians were more worried about climate change than any other global issue, and more worried about it than in any other country in the world. 74% of respondents were not satisfied with the government on climate change and 74% favoured a carbon tax (Crowley 2007:122; Stephens 2007:2). Similarly, the Lowy Institute's annual poll on foreign policy found more people were concerned about climate change than any other

foreign policy issue, with 55% of respondents “very worried” about climate change,<sup>69</sup> while 75% of respondents said tackling climate change should be Australia’s main foreign policy goal (Gyngell 2007:6). The Lowy Institute’s report argued that:

The threat from climate change is now lodged deep in the national psyche: tackling climate change ranks equally with improving education as Australia’s most important domestic challenge (Gyngell 2007:15).

Between May and July 2007, the BBC World Service poll surveyed more than 22 000 people in 21 countries. It found that among developed countries, Australia had the highest proportion of people who believed the cost of energy sources such as coal and oil had to go up to encourage individuals and industry to use less (80% of respondents) (Morton 6 November 2007). Prior to the election, a poll conducted by the Climate Institute in nine marginal seats, including the then Prime Minister Howard’s seat of Bennelong, found that climate change would influence 62% of voters (Topsfield 25 September 2007). It also found that 57% of respondents agreed that Australia should sign a new international agreement with or without China and India’s participation (Murphy 9 November 2007).

Many texts documented widespread public participation in campaigns to raise awareness about climate change and pressure governments to take action, including Earth Hour, Live Earth, Walk Against Warming, and numerous activities undertaken in local areas (e.g. Overington 2 April 2007; Minchin 5 June 2007; Davies 5 July 2007; Ker and Moynihan 12 November 2007). Many letters to the editor promoting the discourse of climate change activism also appeared throughout 2007 (e.g. Fullerton 5 February 2007; Williams 26 May 2007; Hilderbrand-Lockie 30 August 2007; Forcey 7 December 2007).

However, the influence of climate change activism seems significantly less pronounced in terms of the actions taken by members of the public. Because the Labor party went to the election promising greater action on climate change than the incumbent Coalition Government, the Labor party’s federal election victory could arguably be considered a measure of public support for some degree of climate change activism (although other significant factors included concerns about the negative impacts of the government’s *Workchoices* policy on working conditions and a growing dissatisfaction with a

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<sup>69</sup> Fifty per cent were very worried about nuclear proliferation, while Islamic fundamentalism and terrorism were well down the list, at 38% and 39% respectively (Gyngell 2007:21).

government that had been in power for 11 years). Media and NGO texts also described the proactive steps taken by numerous families and individuals, including installing solar panels, water tanks, energy efficient lighting and appliances, and reducing energy use, consumption and waste (e.g. Minchin 9 June 2007; Minchin 15 June 2007; Kleinman 7 July 2007; Ferraro 29 September 2007).

However, these individuals and families represented a small proportion of the total population. For example, during 2007 only 210 282 Victorians households bought government-accredited green power, with even fewer households buying green power in New South Wales (148 275) and Queensland (126 855) (NSW Government 2008). Certainly Australia's greenhouse gas emissions continued to increase throughout 2007, as documented by *Australia's Fifth National Communication* which reported that "In 2007 alone, emissions increased by 61 percentage points, from 21% above 1990 levels to 82% above 1990 levels"<sup>70</sup> (Commonwealth of Australia 2010:6). Consequently, the *actions* taken by the majority of the Australian public could be seen to be more aligned to some extent with the discourse of climate change scepticism.

### *Political responses*

The influence of both the discourse of climate change activism and climate change scepticism can be traced within the political debate around climate change during 2007. As discussed in Chapter 8, a number of key politicians within the Coalition, including the then Prime Minister John Howard, were prominent proponents of the discourse of climate change scepticism. During 2007 several coalition politicians called into question whether climate change is happening, and whether it is caused by humans (e.g. Minchin in Murphy 17 February 2007; Kelly, Vale, Tollner and Jensen in Topsfield 14 August 2007). However 2006 - 2007 saw the majority of the Coalition including John Howard move away from these arguments, in response to the shift in public opinion described above, and in keeping the international trend described by Nason who observed that:

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<sup>70</sup> In 2007, Australia's total net emissions including land use, land use change and forestry were 825.9 million tonnes of carbon dioxide equivalent compared to 453.8 million tonnes in 1990 (Commonwealth of Australia 2010:32).

Across the Western world, governments of all political colour are adopting at least the appearance of a green tinge to address the widespread acceptance that global warming is not some kind of greenie hocus pocus but, in fact, genuine and disturbing reality (Nason 27 January 2007).

In this context, Howard in particular appeared anxious to align himself to some extent with the discourse of climate change activism:

Since the public mood shifted heavily on the issue towards the end of last year, John Howard has been at pains to embrace his inner greenie – even if only with a begrudging quickie cuddle (Schubert 7 February 2007).

As discussed in Chapter 6, Howard made an unprecedented 27 speeches and media releases about climate change during 2007 (compared to a total of four in the preceding 10 years), announcing a range of new initiatives including:

- An Australia-China Joint Coordination Group on Clean Coal Technology (Howard 2007a);
- Phasing out incandescent light bulbs (Howard 2007c);
- The Global Initiative on Forests and Climate (Howard, Downer and Turnbull 2007);
- An emissions trading scheme to begin in 2012 (Howard in Murphy 17 July 2007);
- A clean energy target of 15% by 2020<sup>71</sup> (Doherty and Topsfield 24 September 2007).

The government also tried to exert ownership of the issue of climate change by making it a central focus of the APEC summit hosted by Australia in September 2007. Both the Foreign Minister Alexander Downer and Prime Minister John Howard attempted to frame this meeting as a landmark event in the climate change debate, with Howard arguing:

The Sydney Summit will be one of the most important international gatherings of leaders to discuss climate change since the 1992 Rio Conference. The Australian Government sees this as a historic opportunity to build consensus on a practical way forward for tackling climate change (Howard in Grattan 8 June 2007).

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<sup>71</sup> This clean energy target required that 30 000 gigawatt hours of energy each year come from sources which emit fewer than 200 kilograms of greenhouse gas per megawatt of electricity generated, including clean coal, nuclear power and renewable energy (Doherty and Topsfield 24 September 2007).

These announcements notwithstanding, a degree of climate change scepticism continued to underpin the government's response to climate change throughout 2007, with several coalition politicians amplifying "conflicting scientific points of view" (e.g. Vaile on *The 7.30 Report* 29 October 2007), and framing concern about climate change as alarmist or doom-saying (e.g. Howard on *Lateline* 5 February 2007b). Another common theme running through the coalition's position on climate change was downplaying responsibility and shifting the blame for climate change (Howard 2007b; Howard, Downer and Turnbull 2007). Coalition politicians also frequently used the lexical and rhetorical devices characterising climate change scepticism described in Chapter 8, particularly a derogatory lexicon, religious metaphors, and opposing lexical designations in relation to climate change.

Throughout 2007 the Labor party led by Kevin Rudd sought to frame themselves as offering a more effective response to climate change. In doing so, the opposition both drew upon and contributed to the discourse of climate change activism. Kevin Rudd, shadow environment minister Peter Garrett and other Labor members of parliament frequently raised the issue of climate change during question time, making it one of the most prominent issues in parliament during the first half of 2007. Labor's climate change summit held in Canberra in March 2007 also emphasised the activist arguments that climate change is happening, climate change is serious, current responses are inadequate and urgent action is needed. On more than one occasion Rudd described climate change as "the great moral, environmental, and economic challenge of our generation" (Rudd in *Gawenda* 21 April 2007), and Labor pledged to:

- Ratify the Kyoto Protocol;
- Implement an emissions trading scheme by 2010;
- Introduce a target of 20% renewable energy by 2020.
- Cut Australia's emissions by 60% (against by 2000 levels) by 2050;
- Invest \$500 million to help develop a low-emissions car industry in Australia;
- Promote energy efficiency through providing \$500 rebates for home insulation; and
- Ban electric hot water systems by 2012 (Rudd on *The 7.30 Report* 30 October 2007; Warren 26 November 2007).

Overall, the Australian Conservation Foundation's election scorecard awarded Labor's environmental policies including their proposed climate change policies 56%, relative to 21% for the Coalition (Mitchell 5 November 2007). It is important to note, however, the subtle shift in Labor's rhetoric following their election victory in November 2007. Ratifying the Kyoto Protocol was one of Rudd's first actions as Prime Minister, and the government sent an unprecedentedly large delegation to the 13<sup>th</sup> Conference of the Parties in Bali in December 2007<sup>72</sup>. However, Rudd and his ministers uniformly refused to consider a short-term emissions reduction target and consistently obstructed EU attempts to incorporate a voluntary non-binding emissions reductions target in the Bali Road Map (Grattan, Forbes and Wilkinson 12 December 2007; Warren and Marris 12 December 2007).

This represents perhaps the best indication of the underlying influence of climate change scepticism within Labor during this period, not scepticism about whether climate change is happening or caused by humans, but scepticism about the seriousness of climate change and to what extent urgent action is required. Tellingly, after consistently opposing Labor's climate change policies throughout 2007 (including two scathing editorials in response to Rudd ratifying the Kyoto Protocol), *The Australian* published its first editorial to support Labor's climate change policy during the Bali Conference, arguing that:

The Australian Government is right to be in no hurry to accept big targets for cutting greenhouse gas emissions, even aspirational ones. So far, Prime Minister Kevin Rudd deserves congratulations for standing firm. Against a chorus of demands from green groups at the UN climate change convention in Bali, Mr Rudd has shown a good understanding of both the climate change issues and the politics... Despite ratifying Kyoto, the Rudd Government will not be bullied into making populist commitments that are against Australia's economic interests (*The Australian* 10 December 2007).

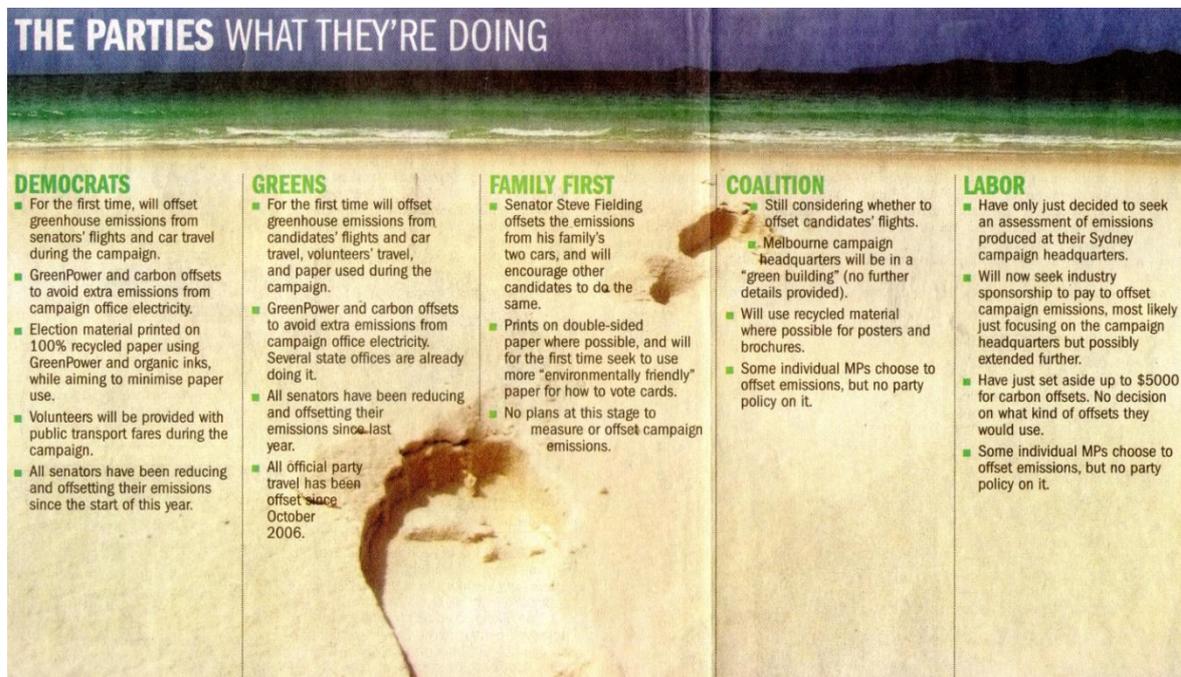
The title of a second supportive editorial two days later, *Australia is realistic on climate talks – After ratifying Kyoto it's business as usual in Bali* (*The Australian* 12 December 2007), summed up the striking similarity between the Rudd Government's stance and the preceding Coalition Government in terms of its position on international climate change negotiations.

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<sup>72</sup> Including then Prime Minister Kevin Rudd, Treasurer Wayne Swan, Trade Minister Simon Crean, Climate Change Minister Penny Wong and Environment Minister Peter Garrett (Warren 1 December 2007).

A number of minor parties also participated in the climate change debate during 2007. The Greens, led by Senator Bob Brown, were prominent proponents of the discourse of climate change activism, consistently arguing that current and proposed responses to climate change were inadequate, and declaring emissions reductions targets of 30% by 2020 and 80% by 2050 (Milne on *Lateline* 23 April 2007b). Similarly, the Australian Democrats committed to pursuing short-term emission reduction targets, and the ACF's election scorecard awarded the Greens' and the Democrats' 94% and 90% respectively (Mitchell 5 November 2007). The 2007 election also saw the emergence of a new political party the Climate Change Coalition which ran several high profile candidates for the Senate, on a platform of addressing climate change and its social, economic and environmental impacts.

Minchin (26 September 2007) provides another measure of the extent to which political actors are genuinely informed by the discourse of climate change activism. During the election campaign she considered the actions taken by the five main parties running in the election to measure, reduce and offset the emissions generated by their election campaigns, as summarised in Figure 9.4. Both the Greens and the Democrats pledged to run 'carbon neutral' campaigns, paying extra for accredited green power, and offsetting emissions from candidates' flights and car travel (Minchin 26 September 2007).



**Figure 9.4** What the parties did to address the environmental impacts of their 2007 election campaigns. *Source:* Minchin (26 September 2007).

As illustrated in Figure 9.4, neither the Coalition nor Labor adopted any significant measures to address the emissions arising from their campaign, reducing the credibility of both parties' claims to be pursuing climate change activism.

### *Business responses*

Chapter 7 drew attention to the variety of businesses involved in the discourse of climate change activism, ranging from new companies selling green power and carbon offsets, to large corporations pledging to become carbon neutral. More than 2000 businesses participated in Earth Hour in Sydney and a wide range of business representatives made statements about climate change in the media during 2007. It is difficult to ascertain to what extent these responses were genuinely influenced by the discourse of climate change activism as opposed to being 'greenwash,' that is, "misleading information disseminated by an organisation so as to present an environmentally responsible public image" (Soanes and Stevenson 2004:625), or "window dressing by businesses to make them look environmentally friendly" (Gettler 3 May 2007). Weekes (4 November 2007) observed that the level of green marketing rose dramatically during 2006 and 2007 in response to consumer concern about climate change, and highlighted concerns that many environmental claims were not necessarily substantiated.

Several major corporations have succeeded in achieving the goals they set in 2007. For example, since 2007, National Australia Bank has implemented a wide range of energy efficiency projects, reducing its emissions by approximately 78 000 tonnes of CO<sub>2</sub>-e each year. It also began to purchase some of its electricity from renewable sources, and since July 2010, has purchased accredited carbon credits to offset its remaining emissions<sup>73</sup> (NAB 2012). Other companies retreated from pledges made to reduce emissions. For example, in 2007 BP announced that it would reduce its emissions by 10% by 2010 (Warren 12 May 2007). However, BP's website declares that:

In 2008, we concluded that an enterprise-wide GHG emissions target was no longer practical or useful in driving emissions reduction at the plant and operational level (BP 2013).

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<sup>73</sup> In 2011-12 National Australia Bank purchased 279 406 t CO<sub>2</sub>-e of carbon offsets (NAB 2012).

There is of course an inherent conflict in fossil fuel companies like BP addressing their greenhouse gas emissions, when the products that they sell are directly contributing to climate change. The responses of companies selling products that rely on fossil fuels are also particularly open to scrutiny. For example, Dan Becker, the director of the Sierra Club's global warming program, was sceptical of General Motors highly publicised entry into the United States Climate Action Partnership in May 2007 declaring:

I think GM is trying to hide behind their participation and pretend they are behind reducing global warming. It's better than deepening global warming, which GM has as a brand, but it isn't going to save a gram of carbon because they are not cleaning up the vehicles [they sell] (Becker in *The Australian* 12 May 2007).

News Corporation's pledge to become carbon neutral in May 2007 is also particularly interesting in the context of the ongoing promotion of climate change scepticism by *The Australian* and other News Corporation papers (Coulton and Hannam 12 May 2007). The chairman and chief executive of News Corporation, Rupert Murdoch acknowledged that "there will always be journalists, including some of ours, who are sceptical, which is natural and healthy," but argued that "the debate is shifting from whether climate change is really happening to how to solve it" (Murdoch 10 May 2007). In this context he said that the company would "reduce energy use as much as possible, then switch to renewable sources of power where it made economic sense and finally over time and as a last resort, offset the emissions that cannot be avoided" (Nason 10 May 2007). News Corporation's Australian subsidiary News Limited did announce that it had become neutral in 2010. However, it has only reduced its energy usage by 10.4%, compared to 2006, and only purchases 5% of its energy from renewable sources. The remaining 85% of its 'reduction' in emissions has been achieved through the purchase of carbon offsets (News Limited 2013). The benefits of offsetting the emissions arising from the production of News Limited's papers could be seen to be reduced by the fact that that the papers continued to promote the discourse of climate change scepticism to their hundreds of thousands of readers through the work of their many sceptical journalists and consistently sceptical editorials.

Pearse (2007:150) observes that by 2007 it was no longer socially acceptable for businesses or industry associations to be seen to openly question the science behind anthropogenic climate change. However, he describes in detail the ongoing efforts by the

Australian Industry Greenhouse Network, the Business Council of Australia, the Australian Chamber of Commerce and Industry, and the Australian Industry Group to oppose reductions in Australia's emissions. These groups not only opposed the ratification of the Kyoto Protocol, but also strongly resisted domestic policies to limit greenhouse gas emissions, and were thus clearly situated within the discourse of climate change scepticism. Pearse argues that they both shaped and reinforced the government's lack of action on climate change throughout the 1990s up until and including 2007 (Pearse 2007:150-4;228-43; also see Hamilton 2007:3-12).

## **9.2 CONSIDERING OPTIONS**

Considerable controversy surrounds what is considered to constitute an appropriate response to the issue of climate change. Wilkenfeld (12 March 2007) argued that "the confusion and misinformation that formerly surrounded climate change has now shifted to the debate on how to tackle it". In this context, this section will examine the ways in which a range of different options for addressing climate change were constructed within the climate change debate during 2007.

### **9.2.1 International Agreements**

#### *The Kyoto Protocol*

The Kyoto Protocol was central to the Australian public debate about how climate change should be addressed during 2007. As discussed in Chapters 2 and 4, although Australia signed the Protocol in 1997, four years later the Coalition Government announced that it would not ratify it, a position it maintained until it lost the 2007 election. The Coalition Government constructed the Kyoto Protocol as inadequate, because it did not require developing countries to commit to any emissions reductions, and unacceptable, because it would damage the Australia's economy. The then Prime Minister John Howard argued:

The Kyoto model, top down, prescriptive, legalistic and euro-centric simply won't fly in a rising Asia Pacific region. It relies on trying to force countries to take on unrealistic obligations and then punishes them for failing (Howard on *Lateline* 6 June 2007).

There is increasing awareness that the Kyoto Protocol has serious shortcomings which prevent it being a credible blueprint for future action (Howard in Grattan 8 June 2007).

The reason I won't ratify the Kyoto treaty is: the existing Kyoto treaty doesn't cover countries like China, and we could be at a competitive disadvantage (Howard in Warren 20 October 2007).

Two further components of the government's framing of Kyoto were that it was a European solution not suited to Australia's economy and that the protocol was a failure with the countries that had ratified the protocol failing to meet their targets. Howard drew upon both arguments in his response to the then EU Environment Commissioner Stavros Dimas' criticism of Australia for not ratifying Kyoto:

You've got the spokesman for a group of countries lecturing us about not having signed Kyoto yet the great bulk of the countries on whose behalf he speaks are falling well behind their Kyoto targets. Our answer to spokesman for the European Union is look to your own affairs, get your countries complying with the targets you have proclaimed... We should be very wary of European lectures on this issue. The economies of Europe, which are not resource intensive, do not have the fossil fuels, do not have the uranium reserves and everything that we have... We would be doing our country a lot of damage if we applied European solutions to a completely different Australian situation (Howard in *The Australian* 3 April 2007).

Howard calling for the European Union to "look to their own affairs" was somewhat contradictory given that one of his government's primary objections to the Kyoto Protocol was that it does not require developing countries to reduce *their* emissions and that the government would not ratify the protocol because developing countries are not subject to targets<sup>74</sup>. The then executive secretary of the UNFCCC Yvo de Boer also highlighted the irony of the Australian Government criticising Kyoto as being too weak given its success in negotiating to be among the few developed countries allowed to increase its emissions to 2012, before pulling out of the protocol (Minchin 30 August 2012).

Despite these inconsistencies, the Coalition Government's construction of the Kyoto Protocol was reiterated and reinforced by many participants in the climate change debate during 2007. Various actors (most though not all proponents of the discourse of climate

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<sup>74</sup> This double standard was also evident in the Coalition's much publicised 'Global Initiative on Forestry and Climate' which focused on reducing deforestation in developing countries but did not address deforestation in Australia (particularly in Tasmania) (Howard, Downer and Turnbull 2007).

change scepticism) characterised Kyoto as “inherently flawed” (Kelly 2 June 2007), “shambolic and unworkable” (Pearson 23 June 2007), “a joke” (Albrechtsen 11 July 2007), “a serious mistake” (Oxley 6 September 2007), “failed” (*The Australian* 6 August 2007), and “moribund” (Oxley 29 May 2007). Professor Aynsley Kellow, Head of the School of Government at the University of Tasmania argued that ratifying a “failed” agreement like Kyoto would only serve to constrain learning from mistakes in forging a new agreement after 2012, and weaken Australia’s reputation as a tough international negotiator focused on outcomes. He said that Australia had been committed to delivering and implementing an effective rules-based system that actually delivered real cuts in emissions. “Ratifying Kyoto is throwing that out the door and saying we’ll ratify something that we know is a crock” (Kellow in Franklin and Ryan 4 December 2007).

Frequently these constructions of Kyoto were demonstrably flawed, with Kyoto’s most vocal critics perpetuating a number of misconceptions about the protocol. For example, Albrechtsen argued that:

Kyoto was an inherently flawed protocol. Sure, 35 developed countries signed up. But none of the developing countries that account for 40% of greenhouse gas emissions did so (Albrechtsen 11 July 2007).

Similarly, the then Foreign Minister, Alexander Downer declared that “Kyoto demands nothing of big developing economies in our region, and covers barely a third of global emissions” (Downer in Minchin 30 August 2007). Yvo de Boer explained that this is factually incorrect:

The Kyoto Protocol covers more than 70% of global emissions. It’s true that only a limited group of industrialised countries have legally binding emissions limits under the protocol, but the much larger group of developing countries including big countries in the Asian region, do have the obligation under the protocol to undertake programs to limit their emissions (de Boer in Minchin 30 August 2007).

Although they are not subject to binding emissions reductions targets, 139 developing countries (including China and India) had ratified the Kyoto Protocol by 2007<sup>75</sup>. As discussed in Chapter 2 these countries thereby agreed to:

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<sup>75</sup> A further 13 developing countries have since ratified the Kyoto Protocol, including most recently, Brunei, Chad, Iraq and Zimbabwe in 2009, Somalia in 2010, and Afghanistan in 2013 (UN 2013).

Formulate, implement, publish and regularly update national, and where appropriate, regional programmes containing measures to mitigate climate change and measures to facilitate adequate adaptation to climate change (UN 1997:10).

It was also common for critics of the protocol to argue that no countries were going to meet their targets:

As for the chief proponents of the protocol, most have proved unable to meet their Kyoto aspirations... even in the countries where the protocol is defended most fervently, performance on carbon emission cuts is abysmal (Pearson 23 June 2007).

When deliberately created global warming hysteria takes hold, silliness isn't far behind. Kyoto is dead. It was never going to make any real difference to global warming anyway, and its most vociferous supporters will miss their emissions reductions targets, or meet them by fraud (Wood 29 August 2007).

This was not the case, with a number of countries including France, Finland and Sweden on track to meet or exceed their targets. Overall the EU had achieved a 2% reduction on 1990 levels, while Britain had already exceeded its target of 12.5% reduction in emissions from 1990 levels (Waterfield 16 June 2007; UN 2008:9).

Many critics of the Kyoto Protocol constructed the protocol as “purely a symbolic statement” (Turnbull 5 June 2007), “in the past” (Howard on *Lateline* 30 October) and “out of date” or “past its use-by-date” (Downer 24 September 2007). For example:

Ratifying the Kyoto Protocol is an empty gesture. The debate, even among the most ardent European supporters of Kyoto, is directed towards post-Kyoto in 2012 when the implementation phases expire (Shanahan 8 June 2007).

The Kyoto global strategy has been shelved and the search has begun for a new strategy. Kyoto failed because its strategy of mandatory increases in the cost of energy was unacceptable to the biggest emitters of greenhouse gases today and tomorrow, the US, India and China (Oxley 6 September 2007).

However, in 2007, the first commitment period of the Kyoto Protocol had not yet begun. As discussed in Chapter 2, the first four year commitment period only began in 2008. So far from being obsolete, the Kyoto Protocol represented the most significant element of the international response to climate change. In this context, the discourse of climate change activism was predominantly supportive of the protocol, and highly critical of the Howard

Government's failure to ratify it. A wide range of environmental groups and other non-government organisations including the ACF, Greenpeace, the Australia Institute and the Climate Institute called on the government to ratify Kyoto, constructing the protocol as an essential step in the process of addressing climate change (e.g. Campbell in *The Australian* 29 March 2007a; Brown on *Lateline* 26 September 2007a). Prominent individuals supporting the discourse of climate change activism also promoted this construction of the Kyoto Protocol. UN Secretary General Ban Ki-moon asserted that:

Given the nature and magnitude of the challenge, national action alone is insufficient. That is why we need to confront climate change within a global framework, one that guarantees the highest level of international co-operation (Ki-moon in Davies 26 September 2007).

Flannery agreed that "there is a critical need for a good, strong, coherent international treaty that everyone's part of" (Flannery in *The Australian* 5 September 2007a). He argued that "the reality is that the Kyoto negotiations are the only negotiations with a hope of creating a global treaty" (Flannery 4 October 2007).

The discourse of climate change activism also constructed the Kyoto Protocol as an economic opportunity. A report commissioned by the ACF and written by environmental consultancy Cambiar estimated that Australia's failure to ratify the Kyoto Protocol cost more than \$3.8 billion a year in lost investment opportunities<sup>76</sup> (Ryan 6 September 2007). It highlighted that Australian companies were at a disadvantage in accessing carbon credit markets and that projects located in Australia did not generate carbon-credits under the Kyoto mechanisms (Weekes 9 September 2007). *The Age* (30 October 2007) also emphasised the lost opportunities associated with Australia's failure to ratify Kyoto, noting that Australia was excluded from emissions trading and the clean development mechanism. Similarly, Hopkins (19 November 2007) discussed the benefits associated with ratifying Kyoto in terms of stimulating investment in the carbon-sequestration sector in Australia (countries that had ratified the protocol could then undertake carbon offset programs in Australia and have the offsets generated recognised in offshore carbon jurisdictions).

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<sup>76</sup> Including around \$1.25 billion in lost opportunities associated with emission-reduction projects in Australia; \$2.4 billion from not fully participating in the protocol's Clean Development Mechanism projects in other countries; and \$1.8 billion by not setting up a regional hub for carbon credit transactions (Weekes 9 September).

The then opposition party led by Kevin Rudd was also a vocal proponent of the Kyoto Protocol throughout 2007. Labor used its commitment to ratify the Kyoto Protocol to distinguish itself from the Coalition Government and highlight the inadequacy of the Coalition's response to climate change (e.g. Rudd on *Lateline* 26 April 2007; *The 7.30 Report* 30 October 2007; and *The 7.30 Report* 21 November 2007). Ratifying the Protocol was one of the first acts undertaken by the new government in December 2007, marking a significant turning point in the climate change debate in Australia.

#### *The Asia Pacific Partnership on Clean Development and Climate*

As discussed in Chapters 2 and 4, the Asia Pacific Partnership on Clean Development and Climate (APP) was established in 2006 by Australia, China, India, Japan the Republic of Korea and the United States, and later expanded to include Canada. During 2007 the Coalition Government attempted to construct the APP approach as a more practical and realistic approach than the Kyoto Protocol, and constructed Australia's involvement in the APP as constituting international leadership. The then Environment Minister Malcolm Turnbull argued that through the APP, Australia "has been playing a leading role in bringing together collaboration between China, India and the US on climate change" (Turnbull 5 June 2007). Then Foreign Minister Alexander Downer declared:

Through the Asia-Pacific Partnership on Clean Energy and Climate the federal government is using its considerable international influence and experience to shape the post-Kyoto agenda and to advance Australia's interests and those of our vulnerable regional neighbours. We understand that climate change can be addressed only through a clear-eyed assessment of international politics. An obsession with outdated ideology will solve nothing (Downer 24 September 2007).

Howard praised the APP's emphasis on "practical initiatives" arguing that it was "focused on what ultimately matters – breaking the nexus between economic growth and greenhouse emissions" and would "deliver genuine results, rather than just hollow rhetoric" (Howard 2007d).

Several prominent climate change sceptics were supportive of the Coalition's construction of the APP as a more effective alternative to the Kyoto Protocol. For example, Warren (1 September 2007) characterised the APP as "the Kyoto alternative in which Australia and

the US play a leading role”, while Albrechtsen (11 July 2007) praised the APP for its “cautious and practical” approach that takes into account “the social and economic realities confronting the real world”. Oxley (29 May 2007) went so far as to say:

The Asian-Pacific Climate Change Partnership initiated by Australia and the US... offers a realistic basis - indeed, the only one - for building a global consensus on climate change. Members emit 60 per cent of the world's carbon dioxide. They are developing practical programs in eight areas where emissions are significant, such as power generation, steel and cement. This program produces tangible results (Oxley 29 May 2007).

*The Australian* editorial commended “the seminal role Australia is playing both in developing practical solutions to climate change and building international support for them,” arguing that:

Australia is at the forefront of practical initiatives such as the Asia-Pacific Partnership on Clean Development and Climate and the Global Forests Initiative, which recognise that responding to climate change requires energy efficiency, clean energy technologies and radical action on forestry, as well as maintaining economic growth (The Australian 6 August 2007).

*The Australian* has long supported the APP process which has been boosted with further research funding for clean coal technology, new-generation nuclear power and better forest management. We know that technology is the best way to deal with problems (7 September 2007).

Others agreed that the APP was an important component of the global response to climate change but argued that it represented a complementary process rather than an alternative to the Kyoto Protocol. For example, Wilson (17 July 2007) described the APP as “a groundbreaking initiative on climate change, bringing together key developed and developing countries for practical, pro-growth, technology-driven efforts,” and “an important step in encouraging China and India to adopt strategies to complement, but not replace, the Kyoto climate change protocol” (Wilson 17 July 2007). Similarly, Dunlop (9 June 2007) insisted that the APP was:

A complementary technological initiative, not an alternative to the Kyoto process... which remains the best way of coordinating a global solution to the issue of climate change (Dunlop 9 June 2007).

In contrast, the discourse of climate change activism generally tended to be critical of the APP. Activists argued that Australia and the United State’s involvement in the APP was an

attempt to deflect criticism that they had failed to contribute to the international response to climate change (e.g. Chaturvedi and Doyle 2010:105-6). They pointed to the APP's emphasis on fossil fuels and the absence of any commitment to emissions reductions as seriously undermining the credibility of the Partnership (Hamilton 2006:6-8; Lawrence 2009:285). Nicholson (9 August 2007) called into question the government's commitment to the APP suggesting that its \$150 million contribution to the Partnership was less than it was spending on political advertising to get re-elected (Nicholson 9 August 2007). As 2007 progressed the APP was increasingly overshadowed by speculation and debate about the APEC Summit to be held in Sydney in September, and the United Nations Conference to be held in Bali in November.

### *APEC and the Sydney Declaration*

The Asia-Pacific Economic Co-operation (APEC) was established in 1989 with 12 members. It soon grew to encompass 21 members<sup>77</sup>, and each year a series of meetings are held leading up to an annual leaders meeting<sup>78</sup>. APEC's original objectives included trade and investment liberalisation, trade facilitation, and economic and technical cooperation. This agenda has since been broadened to include issues such as pandemic disease, supply chain security, and environmental threats (Gyngell 1 September 2007; APEC 2012). In March 2007, Howard announced that as the host nation, Australia would be putting "clean development and climate change" high on the agenda of the APEC leaders' summit to be held in September (Shanahan and Lewis 31 March). He later outlined his hopes for what the summit could achieve:

Australia would like APEC leaders to help design a new approach for future climate change action that could include all major emitters (Howard on *Lateline* 6 June 2007).

I would like to see the APEC leaders agree for the first time that a new international agreement should include an agreed long-term aspirational goal for reducing greenhouse gas emissions... The key task in Sydney is to give political direction to the shape of a future framework for climate change that is truly global (Howard in Franklin 28 August 2007).

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<sup>77</sup>The 21 members of APEC are Australia, Brunei, Canada, Chile, China, Hong Kong, Indonesia, Japan, South Korea, Malaysia, Mexico, New Zealand, Papua New Guinea, Peru, Philippines, Russia, Singapore, Taiwan, Thailand, the United States, and Vietnam (APEC 2012).

<sup>78</sup>The Sydney summit was the culmination of more than 100 days of meetings over the preceding nine months (Ahmed 1 September 2007).

As well as featuring on the agenda for the leaders meeting, climate change became a key issue discussed at meetings of APEC finance ministers, trade ministers and business leaders in the lead up to the Sydney Summit (Marris 7 July 2007; Uren 24 July 2007). Throughout 2007, the government constructed the APEC summit as a major turning point in the climate change debate. Then Foreign Minister Alexander Downer used the summit to position the government as taking a leadership role in the climate change debate, maintaining that “it is a tangible demonstration of Australia’s willingness to lead on climate change and to speak boldly about what needs to be done” (Downer 26 April 2007). Howard and his supporters sought to construct an APEC agreement as offering more than the Kyoto Protocol:

I believe APEC can support an emerging, practical consensus on a global warming framework for tackling climate change that is more comprehensive, more multi-faceted and more flexible than the Kyoto-style approach (Howard 6 June 2007).

For people looking for some sort of insurance against the risks climate change is said to pose, the debate moved beyond Kyoto years ago. Australian diplomatic initiatives culminating in the foreshadowed Sydney Declaration at the Asia-Pacific Economic Co-operation summit... are much more pragmatic (Pearson 23 June 2007).

*The Australian* editorial was also very supportive of Howard’s construction of APEC, arguing that the APEC meeting represented a “significant milestone” in the climate change debate (*The Australian* 6 August 2007).

Other actors emphasised the limited scope of the summit. For example, the US ambassador Robert McCallum stressed that the summit was “just one step in framing a new approach to tackling climate change from 2012” (McCallum in Grattan 14 June 2007). Similarly, Patricia Haslach, the US ambassador to APEC said “we would view this as a continuation of what President Bush announced at the G8 and the next step in the process” (Haslach in Davies and Murphy 1 August 2007). Even Mark Johnson, a climate change envoy appointed by Howard to promote the initiative throughout the region, was at pains to emphasise that APEC was “unlikely to deliver big breakthroughs on global warming.” “There will certainly be no targets. There’s not that degree of commonality” (Johnson in Murphy 8 August 2007).

Many were sceptical about the potential for any significant outcome to arise from the APEC summit. Colebatch (4 September 2007) argued that:

APEC suffers from mission creep, mission overload and mission muddle. It has too many members, too many activities, and too few resources to ensure that it makes a difference in any of them... APEC makes no decisions. It is a low-key, Asian meeting, where leaders chat, exchange views on some key topics, dress up for the cameras, and put out a bland communiqué (Colebatch 4 September 2007).

In an interview with *The Australian* IPCC Chairman Rajendra Pachauri also expressed doubts that the APEC summit would be able to deliver any concrete outcomes on climate change (Warren 9 August 2007). Others were more scathing:

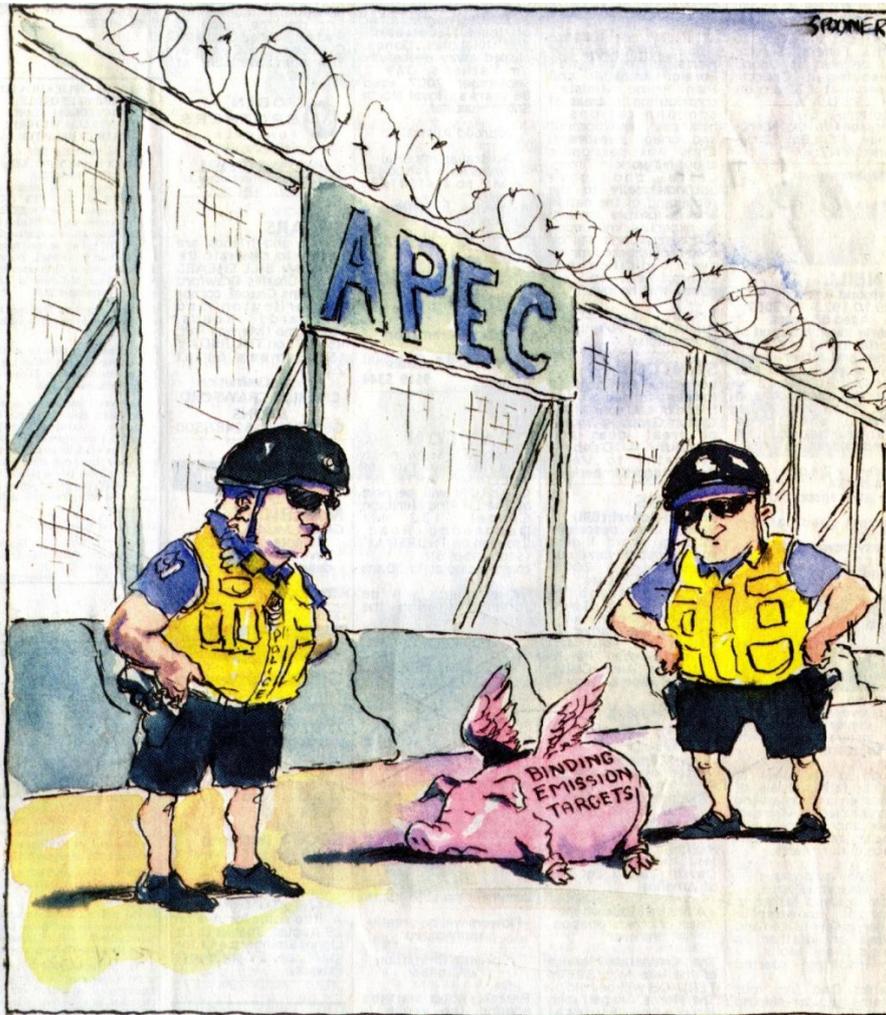
The diversionary tactics of George Bush and our Prime Minister proposing yet further international frameworks (e.g. APEC) should be firmly rejected for the delaying contrivance they are (Dunlop 9 June 2007).

WWF chief executive Greg Bourne argued that APEC could only be considered a success if the final communiqué put climate change ahead of security and trade as the number one priority (Bourne in Jimenez 1 September 2007). Similarly, then Opposition Leader Kevin Rudd insisted that the APEC leaders' meeting should give rise to concrete action toward a global approach to climate change. "Put simply, if APEC can't get its act together on one of the biggest challenges of our day in climate change, then it has no future" (Rudd in Franklin 28 August 2007). By the day before the Summit began, Howard himself was quite deprecatory about its prospects:

I see the whole thing as complementary. I mean APEC's not going to fix it all. Washington, at the end of this month is not going to fix it all, and the Bali meeting's not going to fix it all. But bit, by bit, by bit... Nobody's arguing that you can fix the climate change issue at the APEC meeting in Sydney... All international meetings are gabfests, they always will be (Howard on *Lateline* 3 September 2007).

The final Sydney Declaration did not contain any reference to specific energy intensity or greenhouse gas reduction targets. Instead, it "welcomes initiatives that encourage individual economies to set goals and formulate action plans for improving energy efficiency". It also committed APEC countries to formally recognise the UN process as the sole multilateral forum for international negotiations on climate change, while allowing bilateral regional and global partnerships to promote clean development (APEC 2007). The

Age cartoonist, Spooner, captured the sense of anti-climax, and the unlikeliness that significant outcomes at APEC had never been a genuine possibility in his humorous depiction of two police officers examining a flying pig labelled “binding emission targets” that has crashed outside the APEC security barriers<sup>79</sup>, as shown in Figure 9.5.



**Figure 9.5** If pigs could fly. *Source:* Spooner (4 September 2007).

The Declaration was variously constructed as a “sweeping victory” (Shanahan and Stewart 8 September 2007), a damaging “distraction” and a “failure” (Schubert 9 September). Prime Minister John Howard described the Sydney Declaration as “very important in the march towards a sensible international agreement on climate change” (Howard in Schubert 9 September 2007). *The Australian* (31 October 2007) praised “the Government’s success

<sup>79</sup> A major theme in the media coverage surrounding the APEC summit was the extensive security measures in place to protect foreign heads of state, particularly the US President George W. Bush (e.g. *The Age* 10 September 2007).

in securing the Sydney Declaration at APEC in which, for the first time, China and the US committed to emissions reduction targets”. This argument was quite misleading as both China and the US agreed this when they signed the original UNFCCC in 1992. Shanahan and Stewart (8 September 2007) argued that “Gaining agreement from the US, China, ASEAN countries such as Malaysia and Indonesia, as well as the developed economics of Canada and Japan, will boost Australia’s international standing on climate change”. However, this appeared extremely unlikely in view of the widespread criticism of Australia and the US by regional leaders during APEC for failing to ratify the Kyoto Protocol (e.g. Powell 8 September 2007).

Critics attacked the Sydney Declaration for failing to secure binding targets, charging that it “dramatically fails our region and the globe” (Koutsoukis, Schubert and Nicholson 9 September 2007). In this context, Greenpeace spokesperson Catherine Fitzpatrick argued that the final pact should be called the “Sydney Distraction” on climate change. The executive director of the online activist group GetUp, Brett Solomon, agreed that the declaration was a failure, arguing that: “the agreement falls so far short of what’s required in terms of action on climate change that these leaders should hang their heads in shame” (Schubert 9 September 2007).

### **9.2.2 Domestic Frameworks**

#### *A carbon tax*

During 2007 there was ongoing debate about what form a domestic framework to address climate change should take. There was widespread support for the introduction of a carbon tax (e.g. Davidson 6 January 2007; Jotzo in Kerr 1 March 2007; Jutsen 5 April; Wood 14 November 2007; Abbot in Stewart 22 November 2007; Bradley in Murphy 29 November 2007). In February, the Western Australian Government received a report from its Renewable Energy Taskforce which asserted that “a carbon tax is something that is most likely to ameliorate the emission levels that are in Western Australia” (*Radio National* 5 February 2007a), and the Western Australian Government gave consideration to the possibility of a \$25-a-tonne carbon tax (*Lateline* 5 February 2007a).

In its submission to the Prime Ministerial Task Group on Emissions Trading in April 2007, the Productivity Commission advocated a lower carbon tax. It argued that a \$5-a-tonne tax on carbon emissions could give Australia a start in preparing for an eventual global emissions trading system without harming present economic performance (Marris 5 April 2007; Marris 7 April). Others argued in favour of a higher tax with even electricity generating industry representatives arguing that a carbon price of at least \$20 would be needed to stimulate investment in new technology (*Lateline* 31 May 2007). Activists who wanted Australia to take a leading role in addressing climate change called for a carbon price of up to \$50-a-tonne (e.g. Flannery on *Lateline* 24 May 2007).

Advocates of a carbon tax constructed it as a simple, efficient and transparent option that could be implemented quickly. Frank Jotzo, an economist at the Australian National University, argued that a carbon tax would be “the best mechanism for constraining carbon emissions,” because it would impose a fixed cost on industry (Jotzo in Kerr 1 March 2007). Perkins added that:

A carbon tax would be simpler to administer, would provide a universal price signal, and would provide revenue that would be used to compensate those worst affected (Perkins 27 September 2007).

Gettler argued that:

Most economists agree that a carbon tax is better than carbon trading because it is more efficient, transparent and simple, and can be structured to sidestep all the problems associated with carbon trading (Gettler 26 June 2007).

Wood agreed that “a carbon tax is much simpler to administer and more environmentally effective and economically efficient” (Wood 14 November). Murphy pointed out that in 2007, Sweden, Finland, the Netherlands, Norway and Britain all had a carbon tax, asserting that “carbon should be taxed rather than traded because it provides a quicker price signal to the market in a more transparent fashion” (Murphy 6 December 2007a). Davidson (7 June 2007) argued that, unlike the emissions trading schemes proposed by both the government and opposition, “a carbon tax could be introduced within months”.

There was also a high level of public support for a carbon tax. The BBC World Service poll found that:

Four out of five Australians polled believed the cost of ‘harmful’ energy sources such as coal and oil had to go up to encourage individuals and industry to use less<sup>80</sup>. More than three out of five – 61% – favoured rising taxes on coal and oil no matter what the additional revenue was spent on; this figure leapt to 87% if the money was to be spent on making energy more environmentally friendly (Morton 6 November 2007).

Doug Miller, president of the company that conducted this polling, said that the findings suggested national leaders could find widespread support for a carbon tax on energy. “This poll clearly shows that people are much more ready to endure their share of the burden than most politicians grant” (Miller in Morton 6 November 2007).

However, the only political party supportive of a carbon tax was the Greens, with their major policy option statement *Re-energising Australia*, released in April 2007, proposing to replace the fuel excise with a carbon tax on transport emissions (Lateline 23 April 2007a,b). Both the government and opposition argued that carbon trading was the only viable option because any domestic scheme would need to be compatible with an international trading system. Prime Minister Howard was consistently opposed to introducing a carbon tax, constructing it as a crude, arbitrary, inefficient and potentially damaging option:

I am not going to embrace an approach to climate change that damages our great resource industries. And there’s a danger if you start talking in an arbitrary fashion about carbon taxes that you will do that. There is a very significant difference between a crude carbon taxing system and developing in a measured cooperative way a carbon pricing system (Howard on *Radio National* 5 February 2007b).

I think we have to examine carbon pricing. However, the imposition of a tax is a very crude, inefficient and potentially damaging way of dealing with it, because it pays no proper regard to market forces (Howard on *Lateline* 5 February 2007b).

Howard’s construction of a carbon tax was reinforced by the interim report of his Task Group on Emissions Trading in February 2007, which rejected a carbon tax as an effective method of lowering emissions, advocating a carbon emissions trading scheme instead (*The Age* 7 February 2007). It was also reinforced by a range of business actors who similarly

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<sup>80</sup> This was the highest level of support recorded among the developed countries polled (Morton 6 November 2007).

rejected calls for a carbon tax, constructing it as an invasive, blunt, burdensome, and unacceptable option.

Qantas Chairperson Margaret Jackson argued that “business does not need invasive taxes or regulatory regimes” (Jackson in Korporaal 7 September 2007). Similarly, Simon Tennent, from the Housing Industry Association gave a flat “no” when asked whether Australia should consider a carbon tax on the grounds that it would be a “major handbrake to economic growth” (Tennent in Davidson 6 January 2007). The Chamber of Minerals and Energy argued that a carbon tax would place at risk about \$80 billion worth of resource projects planned for Western Australia (*Radio National* 5 February 2007a), while Minerals Council of Australia chief executive Mitch Hooke asserted that:

Mining companies would not accept a carbon tax or a pre-emptive move to set up a trading scheme before technology was in place to make a market workable (Hooke in Murphy 8 February 2007).

A view he later reiterated, declaring “we don’t want a blunt economic instrument of a carbon tax” (Hooke in Marris 5 April 2007). Michael Potter from the Australian Chamber of Commerce and Industry argued that:

Greenhouse gas emissions should only be priced in as part of a comprehensive international emissions trading scheme... If Australia unilaterally imposed a price for emissions, this would put a large burden on trade-exposed sectors that are emissions intensive... These sectors would move offshore, making Australia worse off and probably increase global emissions (Potter in Davidson 6 January 2007).

Climate change sceptic Moran (29 March 2007) was equally dismissive of either carbon trading or a carbon tax constructing both as trivial and irrelevant:

The choice of instrument is academic – a tax or tradable rights allocation will have only a trivial impact on global emissions increases... Even if we did not find it difficult to adopt measures that would reduce our emissions, we have no means to impose these on the developing world (Moran 29 March 2007).

As shown above, many of the arguments against a carbon tax were based on the premise that an international carbon tax would be impossible. However, some advocates for a carbon tax argued that an international carbon tax would in fact be the best model to address global carbon emissions. For example, Colebatch argued that:

On climate change, governments... must focus not on the ideal outcome, but on the best outcome possible in the real world. That's a global carbon tax. Rather than countries trying to negotiate caps on each other's emissions, they would negotiate a common tax to be placed on significant emissions of carbon dioxide and other greenhouse gases, whether in Melbourne or Mumbai. With a common tax, emission caps would not force industry to relocate overseas. Governments would have a source of funds to invest in developing or spreading energy-saving technologies. And that gives them an incentive to make it work (Colebatch 6 February 2007).

Perkins (27 September 2007) also examined the possibility of an international carbon tax asserting that a carbon tax would be better than a cap and trade mechanism:

The main alternative solutions are "cap and trade" mechanisms for emission control or a carbon tax. A carbon tax would be better but the former has been favoured because there seems to be no way that a global tax could ever be agreed upon... However there is a way that a global carbon tax could be introduced (Perkins 27 September 2007).

Perkins admitted that the stumbling block is finding a way to implement a global tax, but proposed that it could be achieved by means of an export tax on energy goods, specifically coal. Perkins' detailed explanation of how such a tax could be put into practice constructed a global carbon tax as not only possible, but practical and achievable.

### *Carbon trading*

Of all the options for addressing climate change discussed in the climate change debate in Australia, carbon trading was by far the most often referred to in the media during 2007. The world's largest carbon trading scheme, the European Union's emissions trading scheme was in its third year of operation and was worth more than \$US24 billion, with 1.1 billion tonnes of carbon emissions traded.<sup>81</sup> In Australia, the New South Wales Greenhouse Gas Abatement Scheme had been in operation since 2003 and was worth approximately \$US225 million, with 20 million tonnes of carbon emissions traded.<sup>82</sup> A number of Australian companies also participated in the Chicago Climate Exchange, a voluntary but

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<sup>81</sup> The European Union's Emission Trading Scheme was established in 2005. The first three year phase of the scheme targeted emissions from industrial sectors including energy generation, metal production, cement, bricks and pulp and paper, with member states deciding how to distribute allowances between companies within their country, subject to the approval of the European Commission (Stern 2007:327).

<sup>82</sup> The New South Wales Greenhouse Gas Abatement Scheme required electricity producers to reach emissions benchmarks based on the size of their share of the electricity market (i.e. per customer emissions). Companies exceeding their target were required to buy credits from companies that produced fewer emissions than their target (NSW Government 2012).

legally binding carbon trading system established in the US in 2003, and worth \$38 million by 2007, with 10 million tonnes traded (Capoor and Ambrosi 2007). There was growing pressure for the adoption of a national carbon trading scheme, with the state governments announcing that they would begin their own market by 2010 if the federal government did not act (Hannam 27 January 2007). The federal opposition also committed to introducing a national carbon trading scheme by 2010, but postponed working out any details until it received the Garnaut Review which was not due to be completed until August 2008 (*The Age* 26 November 2007).

As discussed in Chapter 4, during 2006 the then Prime Minister John Howard had commissioned a Task Group to advise on the design of an emissions trading system. The fact that this group was officially named the “Prime Ministerial Task Group on Emissions Trading” highlighted the extent to which the Prime Minister wanted to be aligned with the option of carbon trading. The group was chaired by Peter Shergold, secretary of the Department of Prime Minister and Cabinet. Others on the 12-member panel included government bureaucrats and business representatives from companies including Xstrata, International Power, the Australian Pipeline Trust, Qantas, BHP Billiton, Alumina and the National Australia Bank. The composition of the group reinforced the government’s construction of climate change as an economic rather than an environmental or social issue, with some commentators expressing concern about the dominance of minerals and energy producers and the absence of any scientists, environmental representatives or agricultural groups (e.g. Colebatch 6 February 2007).

In February 2007 the Task Group released a 9-page Issues Paper and called for submissions from interested parties. They also held a series of public meetings around the country. More than 200 submissions were received from a wide range of stakeholders including individuals, businesses, industry associations, environmental organisations and community groups (Shergold *et al.* 2007:152). Its final report was released in June, and recommended that Australia should adopt a “cap and trade” emissions trading scheme, with trading to begin no sooner than 2011 or 2012. It argued that the scheme should be “technology neutral” and that mandatory renewable energy targets should be abolished in favour of letting the market decide which energy source is the most likely to reduce emissions. However, in direct contradiction to this, it advocated issuing free permits to

emissions intensive industries such as aluminium and cement, in order to protect them from the impact of a carbon price (Shergold *et al.* 2007:12-3,193).

In July 2007, the Prime Minister outlined the government's response to the Task Group's findings, committing the government to drafting legislation requiring companies to report their emissions. He announced that in 2009, the government would introduce a second wave of legislation giving effect to a carbon trading scheme and establishing a new regulator to oversee it. In 2010, the government would set the short-term price cap for the scheme, issue the permits to polluters, and implement full-scale trading (Howard in Murphy 17 July 2007). As the government had previously rejected carbon trading on a number of occasions, this commitment represented a significant shift in the government's position. In contrast to earlier statements that carbon trading would only damage Australia's economy, Howard now constructed carbon trading as the most effective option to address climate change:

Everyone agrees that you have to have some price on carbon... and the best way of delivering a price on carbon is through market mechanisms, namely an emissions trading scheme (Howard in Marris and Warren 10 May 2007).

He also sought to frame his government's proposed carbon trading scheme as world leading:

We as a government take a very measured, balanced approach to these things. We get all the evidence in and then we take a decision. That's what we did in relation to the carbon trading system, which is going to be when it starts the most comprehensive and sophisticated in the world (Howard on *Lateline* 30 October 2007).

Like Howard, advocates for carbon trading constructed it as "the answer". For example, Gittens (31 March 2007) asserted that carbon trading schemes are "the main game in controlling climate change". Similarly, Warren (17 December 2007) argued that: "carbon trading is the most efficient and low-cost way of making the steep cuts required". Asked how he thought emissions could be reduced at least cost, Grant King, managing director of Origin Energy agreed: "trading is the best way do it" (King on *Lateline* 31 May 2007). Tim Flannery also characterised carbon trading as a "critically important tool" (Flannery on *Lateline* 7 February 2007), while Ryan (11 September 2007) constructed it as "a business friendly solution to CO<sub>2</sub> pollution". In this context, some supporters also constructed

carbon trading as an opportunity. AGL's managing director, Paul Anthony, argued that AGL's participation in the Chicago Climate Exchange would allow the company to put a price on its own emissions and better cost future investments:

Not only giving AGL the ability to mitigate the cost of a carbon-constrained environment but also an ability to trade carbon credits in the world carbon exchanges, adding a new dimension to growing revenue streams (Anthony in Weekes 8 April 2007).

Others emphasised the opportunities for particular industries:

A carbon trading scheme in Australia will benefit gas producers and renewable energy companies such as Santos, Origin Energy and AGL Energy, and forestry companies such as Futuris and help create a multibillion-dollar carbon capture and storage industry (Prior in Burrow and Hannam 31 May 2007).

Quinlivan (13 June 2007) agreed that "the introduction of an ETS will be a major boost for the renewable energy sector by raising the cost of traditional power sources" (Quinlivan 13 June 2007). While Bartholemeusz argued that there could be:

Potentially massive opportunity in areas such as clean coal, renewable energy technologies and in carbon trading itself if we are early adaptors to a carbon pricing environment (Bartholemeusz 7 June 2007).

Many supporters of carbon trading constructed it as inevitable. For example, Kohler (25 April 2007) asserted that: "no matter who is in power Australia will introduce a cap and trade system for limiting carbon emissions". Warren (10 September 2007) agreed that "whatever the outcome of the looming federal election, Australia will have a national emissions trading scheme operating from around 2011", while John Boshier of the National Generators Forum argued that:

Emissions trading is going to happen in Australia. The question is when, not if? The issue then becomes, well, what kind of scheme will we have and what will it look like and what will the prices go to, how many exemptions will there be, will it be consistent with international schemes or not? Those are the big issues now (Boshier on *The 7.30 Report* 7 February 2007).

Given that both the government and opposition were advocating carbon trading, this construction was understandable. However, it did serve to narrow the debate about options to address climate change, effectively ruling out the potential for alternative domestic frameworks such as a carbon tax or regulatory approaches. As it transpired it was also

premature, with Australia finally implementing a limited carbon tax in July 2012, and only due to introduce a carbon trading scheme in 2015 although even this remains uncertain with an election scheduled for September 2013.

Others were less equivocal in their support of carbon trading. For example, Jeffrey Sachs, the director of the Earth Institute, emphasised that carbon trading is “a piece of the puzzle, not the grand answer” (Sachs on *The 7.30 Report* 4 December 2007). Similarly, the Australian Business and Climate Group<sup>83</sup> argued that carbon trading alone will not be enough to deliver the deep cuts in greenhouse gases required both here and overseas, asserting that “Australia must also explore complementary policies to accelerate the uptake of breakthrough low emissions technology” (ABCG 2007:3). It insisted that a carbon trading system would need to be situated within “a broader strategy to support low-emission technologies”, encompassing a long-term emissions target, national risk assessment, energy security, forestry, water and land policies, a diverse range of incentives including capital grants, tax incentives, accelerated depreciation, dedicated funds for research, development and financing for demonstration plants (ABCG 2007:19-21).

Some actors were supportive of carbon trading with the caveat that that it must incorporate stringent targets and be implemented in a timely manner. For example, Prior was concerned that “a lenient trading scheme without rigorous near-term targets... would leave action to be someone else’s problem” (Prior in Burrow and Hannam 31 May 2007). Similarly, Andrew Richards, spokesperson for Pacific Hydro, a wind and hydro-power producer, argued that without time frames and targets it was impossible to judge whether the government’s proposed carbon trading scheme was “a serious effort or a smokescreen” (Richards in Burrow and Hannam 31 May 2007). Don Henry, CEO of the ACF, was also highly critical of the lack of targets in the government’s proposed carbon trading scheme arguing that the absence of targets meant the proposed carbon trading scheme was meaningless:

This scheme, without a cap or target, is a little bit like a bank with no money. It’s got the super structure but it doesn’t have the guts to work (Henry on *Lateline* 17 July 2007).

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<sup>83</sup> Nine major companies participated in the Australian Business and Climate Group during 2007 including Anglo Coal, BP, Deloitte, Mirvac, Rio Tinto, Santos, Swiss Re, VicSuper and Westpac (ABCG 2007:24-5).

Amanda McCluskey, a deputy director of the Investor Group on Climate Change asserted that the government's proposed carbon trading scheme would not start soon enough. She argued that Australia should not wait until 2012 before implementing a carbon trading scheme, and that this delay would only serve to exacerbate investor uncertainty (McCluskey in Gettler 4 June 2007).

Others were highly critical of carbon trading. These actors can be divided into those arguing that it would do too much damage to the economy, and those arguing that it would not do enough to reduce emissions. Some energy intensive business interests insisted that the impact of an ETS without free permits for energy intensive industries was unacceptable and that a carbon trading scheme *must* incorporate free permits for energy intensive industries to protect their international competitiveness and prevent the migration of production and emissions offshore (e.g. Weissner 30 June 2007). Orchison (8 June 2007) argued that carbon trading would have an unacceptable impact of energy-intensive industries including aluminium, iron, steel, automotive manufacture, glassmaking, plastics and chemicals production, cement businesses, and pulp and paper makers.

Australian steelmakers BlueScope and OneSteel were both vocal opponents to carbon trading. In its submission to the Task Group on Emissions Trading, BlueScope argued that “any emissions trading scheme potentially compromises the competitiveness of Australia's steel industry” and that “this will likely lead to increasing imports of steel products from non-carbon constrained countries, and drive future investment in steelmaking offshore” (BlueScope Steel 2007:1). Similarly, OneSteel asserted that carbon trading “would place the Australian iron and steel industry at a significant disadvantage relative to its international competitors” which could lead to a migration of production to countries with no greenhouse gas emissions constraints and an increase in greenhouse gas emissions per tonne of steel made (OneSteel 2007:3).

Others emphasised the cost to the Australian economy more generally. For example, then Finance Minister Nick Minchin argued that “it is a fallacy to suggest that you can just unilaterally introduce a domestic scheme without doing significant damage to Australians” (in Murphy 7 February 2007). Furthermore, Minchin insisted that an Australian carbon trading scheme would have no significant impact on global greenhouse gas emissions:

To have some Mickey Mouse thing in Australia might make some people feel good but will do nothing for emissions and it will hurt the Australian economy. A critical part of Australia's international competitiveness is low energy costs, you give that up at enormous peril (Minchin in Murphy 17 February 2007).

Switkowski shared this view arguing that because Australia's contribution to climate change is negligible, a domestic emissions trading scheme would be of "no use":

Our climate is completely hostage to the emissions of other countries... that's not blame shifting, that's just making an obvious statement. I don't believe that an emissions trading scheme on its own is going to make much difference to our emissions (Switkowski in Murphy 21 March 2007).

Prominent climate change sceptic Ray Evans also argued that carbon trading would destroy Australian economy and that "industries that depend on low-cost electricity for their international competitiveness will shut down and relocate". He scathingly constructed the government's proposed carbon trading scheme as "just another irony in a long history of bizarre jokes and puzzles" (Evans 20 July 2007).

In contrast, some climate change activists argued that carbon trading was inadequate because it did not go far enough to reduce emissions. These actors constructed carbon trading as complex to administer, easy to postpone and easy to rot. For example, Perkins argued that:

Trading schemes are not really the market solution that they are claimed to be. There are all sorts of administrative difficulties in setting and allocating the so-called 'permits to pollute' and they do not provide the clear, long-term price signal that industry needs (Perkins 27 September 2007).

Gettler (26 June 2007) argued that carbon trading "creates opportunities for cheating, leads to unpredictable fluctuations in energy prices and does nothing to offset high power costs for consumers" and can "allow governments to pay off politically powerful polluters such as the coal industry by giving them permits". Wood (14 November 2007) agreed that "cap-and-trade is open to abuse, particularly at the international level, as the European Union's system has spectacularly demonstrated". Davidson also constructed carbon trading as flawed:

The problem is cap-and trade schemes are difficult to understand and complex to administer and therefore easy to postpone and abort, as has been shown in Europe, where a cap-and-trade system was introduced as part of Europe's Kyoto commitment. The result was increased emission, windfall profits to electricity generators and the cost burden falling on households (Davidson 7 June 2007).

He was highly critical of both the Coalition and Labor's proposed schemes, particularly the fact that both postponed implementation, and neither included clear targets or penalties:

Labor has emissions targets for 2050. They aren't much good without firm signposts along the way. The Coalition promises a cap-and-trade system without announcing the cap and promising free pollution permits to the biggest polluters. This is absurd. It is like a state government responding to public outcry about road carnage with a promise to introduce speed cameras and booze buses without setting speed and blood alcohol limits first, and promising alcoholics fine rebates when the limits and penalties are decided (Davidson 7 June 2007).

### **9.2.3 Improving Efficiency and Reducing Consumption**

#### *Improving energy efficiency*

In general, Australia has had a poor record on energy efficiency. A report by the International Energy Agency (IEA) found that that Australia had performed worse than any other major industrialised country in improving energy efficiency. On average, Australia's energy use per unit of GDP in 2007 was 35% higher than the Western average (IEA 2007). The impact of this inefficiency is compounded by how carbon intensive Australia's energy is:

Overall, Australia emerged as the most carbon-intensive country in the West, even more than the US, producing three times as much carbon per dollar of gross domestic product as Norway and Sweden. A kilowatt hour of electricity generated here generates more carbon than in any other country: about 840 grams, or 10 times as much as in France or 20 times as much as in Sweden. (Colebatch 15 September 2007).

Despite this, the option of improving energy efficiency to address climate change had a much lower profile in the climate change debate during 2007 than the options discussed so far. A number of state and federal policies including the Victorian State Government's

Industry Greenhouse Program<sup>84</sup> and the federal government's Energy Efficiency Opportunities Program<sup>85</sup> did promote energy efficiency. In February 2007 the Coalition Government also introduced legislation that would phase out inefficient incandescent light bulbs by 2010 (Topsfield 20 February 2007). However, Warren observed that overall there were very few formal policy initiatives on energy efficiency, arguing that:

Australia's climate change debate is becoming a contest between rival mega-projects, while both major parties fail to move on simple measures to drive the cheapest and fastest cuts to greenhouse gas emissions through efficiency improvements and reducing demand (Warren 2 April 2007).

Pears argued that the value of improving efficiency had been wrongly discounted by energy economists:

The economists who have dominated energy policy have been energy-efficiency sceptics. They have seen it as a marginal, minor issue because their economic models are not well suited to modelling dramatic change in the productivity of energy. Australian business has actually taken its eye off the ball in terms of energy efficiency because we are obsessed with energy-market reform to reduce energy prices (Pears in Warren 2 April 2007).

In contrast, a range of actors called for more significant regulations and investment to promote energy efficiency. Dunlop called on the government to immediately and urgently "implement world's best practice efficiency and energy conservation standards" (Dunlop 23 October 2007). Former senior CSIRO climate change scientist Barry Pittock also called for urgent action arguing that "major and immediate expenditure initiatives are needed for energy efficiency, measured not in millions but billions of dollars" (Pittock 20 November 2007). Similarly, Jutsen argued that "it is time to start the process of stabilising the climate by immediately acting to improve efficiency. There are no losers in this strategy" (Jutsen 5 April 2007). Internationally, the InterAcademy Council, whose 15 members include the national science academies of the United States, Britain, France, Germany, Brazil, China and India, appealed for a planet-wide drive in favour of energy efficiency to reduce carbon emissions (in *The Australian* 27 October 2007).

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<sup>84</sup> This program involved mandatory audits of the state's biggest energy users and required mandatory implementation of any identified efficiency measures with a three-year payback or shorter (Victorian State Government 2013).

<sup>85</sup> The Energy Efficiency Opportunities Program required mandatory audits and public reporting but implementation remained voluntary (Hannam 18 June 2007).

These, and other actors advocating improved efficiency constructed improving energy efficiency as “the hope of the side,” the option offering the greatest opportunity to achieve short-term emissions reductions. For example, Colebatch argued that:

In the short term, the International Energy Agency argues, the top priority must be to raise the efficiency with which we use energy: in buildings and appliances, transport and industry. Why? Because that’s where we already have the technology to cut global energy consumption by 10 per cent – equivalent to China’s entire consumption (Colebatch 6 February 2007).

Hannan (18 June 2007a) agreed that “improving energy efficiency has the potential to deliver bigger cuts in greenhouse gas emissions than any other action,” while Jutsen suggested that:

Australia has the opportunity to substantially reduce its greenhouse gas emissions economically by improving energy efficiency across business, government, homes and transport activities. This could allow us to reduce to zero our growth in energy use within five years simply through making efficiency improvements that have a positive net economic benefit – while maintaining economic growth rates – thereby demonstrating we can decouple energy growth and economic growth (Jutsen 5 April 2007).

Low (30 March 2007) emphasised the need for incentives, subsidies and regulations to promote efficiency, insisting that:

To achieve these steps, regime change will be necessary, not of the political regime but the regime of incentives, subsidies and regulations that frame market transactions. For instance, the Government subsidies to four-wheel drive vehicles would have to be changed to subsidies to low emission vehicles (Low 30 March 2007).

Hansen agreed, asserting that “if it’s not required it’s not likely to happen” (Hansen on *The 7.30 Report* 13 March 2007), while Jutsen argued:

To achieve substantial improvements in efficiency across the economy, we need to employ the entire policy toolkit including minimum energy efficiency standards, substantial incentives to encourage businesses (and homeowners) to accelerated efficiency investments, as well as measures such as carbon taxes and/or trading (Jutsen 5 April 2007).

A number of businesses also advocated improving efficiency to address climate change, and there were many examples of businesses promoting energy-efficient practices and

investing in energy-efficient technology (e.g. Coultan 10 May 2007; Nason 10 May 2007; Sprothen 14 May 2007; Dearne 15 May 2007). Warren explained:

Its supporters range from manufacturers of low-tech building products like insulation and double-glazing to hi-tech companies like Bluglass, which is working to commercialise new super-efficient lighting that uses light emitting diodes (LED). It includes global appliance manufacturers and a handful of fast-growing technical consultants like Energetics and Big Switch driving micro-reform of energy use in larger manufacturing and service companies (Warren 22 October 2007).

Hannam (18 June 2007b) described a brick manufacturing firm in Perth which participated in a trial for the federal government's Energy Efficiency Opportunities program and found more than 50 potential savings at the plant's 30-year old kilns. Analysis showed that, for an investment of less than \$1 million, the top dozen of those ideas could cut energy use by up to a fifth, and emissions of carbon dioxide equivalent by about 19 000 tonnes a year. Michael Catchpole, chief executive of the Plastics and Chemicals Industries Association, said the plastics and chemical sector could tackle climate change through better energy efficiency and less energy use, thus cutting greenhouse emissions (Catchpole in Hopkins 1 October 2007). Energy efficiency was also the focus of BHP Billiton's climate change policy released in June 2007 (Goodyear 18 June 2007), while a number of new companies such as Easy Being Green and Climate Friendly focused on helping businesses and households adopt energy efficiency targets and gain energy carbon credits (Sharp 9 April 2007; Murphy 6 December 2007b).

These and other business actors constructed improving energy efficiency as a solution that was highly profitable with many co-benefits. For example, Chip Goodyear, the chief executive of BHP Billiton argued:

First, we need to look at individual and collective behaviour and consider how we as individuals, governments and businesses can be more efficient in our energy use. This has immediate paybacks in cost savings and increased productivity (Goodyear 18 June 2007).

Similarly, Qantas chairman Margaret Jackson asserted that "environmental efficiency is good for our own business. Fuel efficiency is better for the aviation industry, as well as the environment" (Jackson in Korporaal 7 September 2007). Westpac's head of corporate affairs Noel Purcell declared that improving efficiency had significantly boosted the bank's

bottom line and the issue was no longer seen as an “add on” but central to its operations. “For all companies that get in and start managing for environmental efficiency, it cuts costs,” he said, “it’s directly correlated” (Purcell in Weekes 8 April 2007). It is interesting to note that perhaps for this reason even some actors promoting the discourse of climate change scepticism supported improving energy efficiency. For example, despite regularly calling into question the seriousness of climate change and undermining calls for action to address climate change, as discussed in Chapter 8, *The Australian* was supportive of measures to improve energy efficiency (e.g. *The Australian* 7 May 2007).

However, despite the widespread support for improving energy efficiency and initiatives to promote improved efficiency, in many cases Australian households actually became less efficient during 2007:

Energy-hungry appliances are driving the growth in household consumption. The spread of wide screen plasma and LCD TVs, freezers, dishwashers, personal computers, sound systems and home electronics generally easily cancelled out the significant efficiency gains in the design of refrigerators and washing machines (Colebatch 15 September 2007).

In particular, Moses noted that the increasingly popular large Plasma and LCD televisions were far less efficient than their Cathode-ray predecessors, using up to 30 times as much energy:

The trend for ever-larger screens is sending home power bills sky high, with TV sets fast overtaking refrigerators and freezers as greenhouse gas culprits. Television power was increasing at an alarming rate as consumers upgraded from low-power cathode ray TVs to energy-guzzling plasma and LCD behemoths. TV’s were fast overtaking fridges, heaters and air-conditioners as the major contributor to greenhouse gas emissions from households (Moses 10 October 2007).

Others observed the growing popularity of large and inefficient SUVs and 4WDs, highlighting that this trend was in fact supported by discounted tariff on imported work vehicles which made them cheaper than they otherwise would be:

For over a decade, four-wheel drives have been made cheaper to buy in Australia by a reduced import tariff of just 5 %, compared to a 10% tariff on other imported passenger vehicles. Australia has no mandatory fuel efficiency standard. It’s up to car manufacturers to decide how much petrol their engines will use. We’re behind China, we’re behind Korea, we’re behind Taiwan in

this sort of area. Australia also has a fringe benefit tax which effectively encourages business owners to use more petrol to get a tax break... The fringe benefit tax not only encourages people to own big cars often, but also to drive them more – it’s one of the most perverse incentives in the world (*Lateline* 3 December 2007).

Some within the business sector were strongly opposed to regulations to improve energy efficiency. In particular, the Australian automotive industry was vocal in its opposition to regulating the fuel efficiency of new cars, vowing to fight any moves to impose compulsory greenhouse gas emissions for new vehicles, despite such rules already applying in Europe, China and the US. Federal Chamber of Automotive Industries chief executive Andrew McKellar insisted that mandatory efficiency standards would be “impractical” and would clash with the introduction of emissions trading in Australia, constructing them as an unreasonable and unjust imposition on both industry and consumers, declaring:

As General Motors boss Bob Lutz has described it, that’s like trying to solve the nation’s obesity problem by saying that the clothing manufacturers are no longer allowed to manufacture larger sizes (McKellar in Minchin 27 July 2007).

This is a singularly flawed comparison, given that larger size clothes do not *cause* obesity unlike inefficient cars which *do* cause disproportionately high greenhouse gas emissions. In contrast, others argued that improving energy efficiency doesn’t have to detract from the pleasure associated with such things as driving cars, but rather, it provides a way to reduce emissions without having to change lifestyles or sacrifice consumer goods. The former chairman of Shell, Mark Moody-Stuart explained:

A European environment minister once asked me how to get people off their love affair with the motor car. I believe we should not even try and interfere with that love. It is deeply embedded, and interfering in other people’s love affairs is seldom productive. But the love is with personal movement and space and the freedom that it brings, not the internal combustion engine per se. We have to make eco-efficiency as fashionable as four-wheel-drive vehicles. This is not hairshirt stuff. It should be eco-hedonism – taking pleasure from comfort, operating performance as well as eco-efficiency (Moody-Stuart in *The Australian* 8 May 2007).

Similarly, then Governor of California Arnold Schwarzenegger (a Republican) argued that:

You can have an engine that's fast and furious, and still reduce greenhouse gas emissions by 30-40%. Biofuel is not like some wimpy feminine car, like a hybrid. Because the muscle guys, they have this thing, "I don't want to be seen in the little, feminine car". You don't have to get rid of sport utility vehicles; you don't have to get rid of Hummers. We need to take the technology and make clean engines (Schwarzenegger in Kleinman and Murphy 17 April 2007).

Here Schwarzenegger constructs efficiency as a "get out of jail free card", suggesting that it offers the means by which we can significantly reduce greenhouse gas emissions, without having to change our lifestyles. Others within the discourse of climate change activism disagree, arguing that to adequately reduce emissions we will have to significantly change our lifestyles and significantly reduce consumption.

### *Reducing consumption*

Climate change activists argued that as well as requiring policy instruments, economic tools and new technologies, the solution to climate change requires *social* change. In this context, the final major option featuring in the climate change debate during 2007 that will be considered was reducing consumption. A number of activists highlighted how unsustainable current consumption levels are. Schneider argued that "we are holding the sustainability agenda of this planet hostage to our accustomed consumption. That is a sustainability train wreck" (Schneider in Berkovic 3 October 2007). At the launch of the IPCC's Fourth Assessment Report, IPCC chairperson Rajendra Pachauri declared:

What is an extremely powerful message in this report is the need for human society as a whole to start looking at changes in lifestyles and consumption patterns (in Clarke 4 May 2007).

Colebatch pointed out how much energy we waste:

Almost unconsciously, we have adopted energy wastage as part of our lifestyle. Back in 1950, the average home used 1500kWh of electricity a year. Today the average home has barely half as many people, but uses 6388kWh... we consume about 10 times as much as our Grandparents did (Colebatch 22 May 2007).

Thus, as well as advocating improving energy efficiency, Friends of the Earth activist Tony Jupiter argued that "energy-use avoidance" is essential (Jupiter on *Lateline* 14 March

2007). Fisher constructed this option in terms of “conservation mining”, arguing that reducing consumption is:

Our deepest, cheapest and cleanest energy mine. It supplies energy as if the environment mattered by finding opportunities not to use it! The first level in this mine involves dissolving or reversing perverse incentives to reducing energy use... Once we have sorted and restructured the many ways by which we are urged to use more rather than less energy, we can turn to finding ways of living and doing things that don't involve much energy: cricket instead of car racing; fresh local foods rather than processed imported foods; local holidays at the beach, in the cool of the mountains, or even local to our vibrant and interesting cities (Fisher 10 May 2007).

The most common way in which this option was presented within the climate change debate during 2007 was in terms of the small steps individuals can take to reduce their greenhouse gas emissions. *The Age* editorial was a particularly vocal proponent of this theme:

Now is the time to be supportive, in the most practical, efficient ways possible. If this means shorter showers, switching off lights when leaving a room or leaving the car at home and taking the tram, it all adds up. We are all potential gods of small things who, through community efforts, can achieve big things for our world (*The Age* 8 January 2007).

Environmental organisations urged people to reduce their consumption in a variety of ways as shown in Figure 9.6 which illustrates a flyer produced by the ACF during 2007. In September 2007, the government launched a \$25 million public education campaign: *Be Climate Clever*, offering members of the public advice on reducing energy use (Khadem 17 September 2007). This campaign encompassed billboards, television advertisements, and a 10-page brochure inserted in national and state newspapers around the country. The brochure outlined 28 steps that individuals and households can take to reduce their greenhouse gas emissions, including such things as:

- Adjusting the thermostat by 1° to cut emissions from heating and cooling;
- Putting the lids on saucepans - they'll heat much quicker and use less energy;
- Checking that fridge seals are clean so the fridge door closes properly;
- Fixing dripping taps and installing a water efficient shower head;
- Inflating car tyres to the maximum recommended pressure; and
- Choosing energy efficient appliances (Commonwealth of Australia 2007).



# TOP TIPS TO REDUCE YOUR HOUSEHOLD'S CONTRIBUTION TO CLIMATE CHANGE

### 1. Switch to Green Power



The best way to cut your greenhouse pollution is to buy accredited Green Power from your energy retailer to ensure renewable energy at home: [www.greenpower.gov.au](http://www.greenpower.gov.au)

### 2. Leave the car at home



Walk, cycle and catch public transport to reduce your greenhouse pollution and stay healthy. Take one less 10km car trip each week and you'll cut your greenhouse pollution by 600kg a year.

### 3. Adjust your thermostat



A difference of just one degree on the thermostat of your heater or air conditioner can reduce your energy consumption by 10%.

### 4. Take fewer air flights



Planes create significant greenhouse pollution. If you can avoid one Sydney to Melbourne return air trip, you'll reduce your greenhouse pollution by 450kg.

### 5. Eat less red meat



Meat, especially beef, has a high environment impact. Eat one less serve of red meat a week and you'll reduce your greenhouse pollution by 300kg a year and save 10,000 litres of water.

### 6. If it blinks, switch it off!



10% of Australian household electricity use goes on standby power: turn off your appliances at the wall or switch when not in use and cut your greenhouse pollution.

### 7. Short efficient showers



Get a water-efficient showerhead and you'll save up to 100,000 litres of water a year and use less energy for hot water.

### 8. Look for the stars



Energy-smart appliances will save you money and reduce your greenhouse pollution. Most new appliances display a star energy rating – the more stars, the more efficient the product: [www.energyrating.gov.au](http://www.energyrating.gov.au)



For more tips and to join the GreenHome Challenge visit:  
[www.acfonline.org.au/greenhome](http://www.acfonline.org.au/greenhome)



AUSTRALIAN CONSERVATION FOUNDATION

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**Figure 9.6: Top tips to reduce your household's contribution to climate change.**  
 Source: The Australian Conservation Foundation (2007).

With some notable exceptions, particularly buying green-power and investing in solar power, most of the changes advocated by the ACF, Be Climate Clever and other similar campaigns, are very small. In many cases they normalise and even promote a high level of energy use, precluding more significant changes. For example, both the ACF flyer and the Climate Clever brochure advocate adjusting air conditioner thermostats by just 1°, rather than suggesting a specific temperature setting or urging people to avoid using air conditioners altogether. Similarly, the ACF urges people to reduce their meat consumption by just one serve of red meat per week but doesn't suggest that further reductions could be made (the Be Climate Clever brochure doesn't mention eating less meat at all).

While such modest suggestions may serve to avoid alienating consumers they may also promote the sense that we are addressing climate change when in fact the vast majority of our lifestyle is still directly causing it. This could be seen to represent an internal inconsistency within the discourse of climate change activism. The public are presented with compelling evidence that climate change is a complex and serious issue that will affect every facet of the natural environment and human society, and then told that all they need to do is change their lightbulbs, or in the case of Earth Hour, switch their lights off for one hour every year, as shown in Figure 9.7.



**Figure 9.7: Earth Hour flyer.** *Source:* WWF (2008).

This flyer warns that global warming is now the greatest threat we have ever faced, but reassures people that we can make a difference if we act together and join Earth Hour. Apparently by switching off our lights for 60 minutes on the 29<sup>th</sup> of March we can stop

global warming before it is too late. There seems to be considerable imbalance between the construction of the problem and the solutions offered. In this context Boykoff and Goodman suggest that:

Green consumer behaviours - such as recycling and the purchase of carbon 'offsets' – might serve as a misguided palliative balm to sooth our collective consciousness, embedded still in unsustainable lifestyles (Boykoff and Goodman 2007:10).

Marshall also argued that campaigns such as Earth Hour and Live Earth can actually be counterproductive:

Live Earth also plays strongly to another powerful denial strategy: The adoption of minimal and tokenistic behaviours as proof of our virtue. One concern is that people will believe that their participation in the concerts is in itself an action against climate change. Live Earth is calling on people to “answer the call” and sign a pledge... When you enter the pledge, you are told that the actions that count are turning off your lights more than you do at the moment and using the bus once a week. These are fine as first steps, but I worry that people are tempted to stop there (Marshall 7 July 2007).

Despite their simplicity and associated cost savings, many actors within the discourse of climate change scepticism rejected and ridiculed these calls to reduce consumption. Some did so in a mild way, constructing small steps such as switching off lights saving water as trivial or ridiculous (e.g. Dalton 7 July 2007; Glover 11 August 2007). Others were far more critical, drawing upon the derogatory lexicon described in Chapter 8 to construct calls to reduce consumption as extreme, unreasonable, unjust, and a threat to the fabric of society. For example, in a caustic opinion piece originally published in the *Wall Street Journal Europe*, Norvell stridently opposed calls to reduce consumption, arguing that “climate change hysteria in Britain has reached a ridiculous level” and “the clamour has gone beyond mere pontificating”. He implies that calls to reduce consumption amount to a call to do nothing at all, and that the consequence would be a lifeless world:

If we really wanted to make a difference, one researcher smugly suggested, we would all lie on our sofas doing nothing. No watching television, though – a plasma screen, with its standby function, eats up too much electricity – and no reading about the splendours of Angkor Wat in the Rough Guides, either, because of the trees felled for paper and costs of transporting all those heavy books. If we go nowhere, produce nothing, eat nothing, then greenhouse gas emissions would drop to zero. That would make the world much cooler. And lifeless (Norvell 25 October 2007)

Similarly, Williams opposed calls to reduce unnecessary travel on the grounds that it would reduce the richness and diversity of society:

I want to see more people fly, I want to see more people socialise, I want to see the world become a little bit more harmonious and universal in its aspiration. What we have now is the idea that we should all stay at home, plant a tree in our backyard and look no further than the parochial boundaries. That's a tragic vision for the future (Williams on *Lateline* 14 March 2007).

Price constructed reducing consumption as irresponsible and “recessionary”, arguing that we should not forgo using energy or flying because it will cause a recession and job losses:

A stagnant economy helped bring riots to French streets in 2005. What would be the social effects of an economy semi-permanently on the edge of recession? Would it produce an electorate interested in supporting high-minded climate change initiatives? Simply reducing consumption is not an answer. Irrational self-denial belongs to the Middle Ages, so we should think twice about simply turning out the lights (Price 3 April 2007).

Similarly, Oxley (29 May 2007) insists that any response to climate change needs to be “growth friendly”. He accuses those seeking to reduce consumption as attacking the poor:

With about two billion people still living on less than \$1 a day, curbing consumption of electricity worldwide curbs growth, which is the first thing required to eliminate poverty. Nothing better illustrates the lack of interest in the poor by the Greens, [who] have cemented themselves to the idea that the consumption of energy must be regulated, blinded by the economically wrong-headed idea that we consume too much (Oxley 29 May 2007).

In direct contrast to Oxley's assertion that those advocating reducing consumption are not interested the poor, in many cases the poor are at the forefront of arguments to reduce consumption. For example, Lowe (8 September 2007) argued:

It is simply impossible for all the people in the world to consume as many resources as we do... Therefore we have to live more simply so others may simply live (Lowe 8 September 2007).

Freier also called for a reassessment of consumption in order to address both climate change and global injustice:

I challenge us to reflect on the daily consumer choices we make. We need to reflect on how we are complicit in creating and supporting economic injustice that imprisons others in lives of suffering, and adds to pollution and global

warming. I hope that we will come to the position of saying a clear and deliberate “no” to the greed and consumerism that our culture relentlessly promotes, and to which we have all to some degree become captive (Freier 26 June 2007).

In this context, some proponents of the discourse of climate change activism argued that taking simple steps to reduce consumption is inadequate, and that far more fundamental and radical changes are needed to address climate change. This ranged from calls to have fewer children:

Having one child with your partner instead of two or more is the biggest contribution to reducing greenhouse gases you can make... you will be directly responsible for cutting your family’s greenhouse gas emissions by about 50% in the next generation (Backman 19 December 2007).

To calls to change the food we eat, with some activists calling for people dramatically to reduce consumption of meat and dairy products (e.g. McMichael *et al.* 2007; Pachauri in Minchin 13 September 2007). Proponents for major social change did not shy away from the fact that it would not be easy or painless to achieve:

Fixing global warming will not be painless, and don’t believe anyone who tells you it will be... We will have to live differently (Colebatch 22 May 2007).

Our Government... continually regurgitates the mantra that technology is the answer. It is undoubtedly critical, particularly the renewable energy technologies that have been deliberately suppressed, but technology alone is not enough. There must be a major change in our values (Dunlop 23 October 2007).

Marshall (7 July 2007) agreed that drastic changes will need to be made to address climate change, arguing that “we need to be honest with ourselves that the low-carbon economy will simply not permit long-distance holidays, commuting by car and mass consumption”. However, he insisted that while daunting, the need for such major change can be exciting and inspiring:

Rather than concentrating on small steps or personal abstinence, [we] could be promoting a far more exciting vision of the sustainable low-carbon world we need to create: a world based around health, animal and social rights, justice for the poor, good housing for all, and the promotion of happiness rather than consumption. This is what world inspire real social and political change (Marshall 7 July 2007).

## CONCLUSION

Both the discourse of climate change activism and climate change scepticism were sustained by the media throughout 2007. The discourse of climate change activism was particularly widely reported and supported within the media, achieving unprecedented prominence through many front page stories, feature articles and editorials. However, while there were significantly fewer media texts reporting and supporting the discourse of climate change scepticism, it remained a powerful discourse within the public debate about climate change during 2007.

The influence of both discourses can be traced through public, political and business responses to climate change. Public opinion polls revealed that a significant proportion of the public were concerned about climate change. However, a far smaller proportion took action to address their contribution to the problem, by reducing their greenhouse gas emissions, and Australia's emissions continued to grow throughout 2007 and beyond. This imbalance between rhetoric, and action, was even greater within the political sphere, with both the government and the opposition purporting to offer leadership on climate change, while their policies were far less ambitious. Business responses were mixed, with some businesses actively seeking to reduce and offset their emissions, while others remained hostile to addressing climate change and continued to actively support the discourse of climate change scepticism.

The debate about what should be done to address climate change was extremely contentious during 2007. The Howard Government remained unstinting in its opposition to the Kyoto Protocol, constructing it as inadequate, unacceptable, failed and irrelevant. This construction was supported and amplified by a wide range of actors, particularly climate change sceptics. Together with these actors, the government sought deflect criticism that it had failed to address climate change by attempting to shift attention to the APP and APEC, constructing both initiatives as more practical, effective and realistic than Kyoto. However, this effort was largely unsuccessful, with critics constructing both the APP and the Sydney Declaration on Climate Change as tokenistic diversionary tactics. The Rudd Government's ratification of the Kyoto Protocol in December 2007 reinforced the activist constructions of the Protocol as the most significant element of the international response to climate change, and an essential step in the process of addressing climate change.

On the domestic front, the government and the opposition were far more closely aligned. Despite many arguing that a carbon tax would be simpler, more efficient, more transparent and able to be implemented more quickly, both the government and opposition rejected a carbon tax in favour of carbon trading. Both constructed carbon trading as the most efficient option to address climate change, a construction that was supported and reinforced by many participants in the climate change debate, particularly from within the business sector. On the other hand, critics argued that carbon trading is complex to administer, easy to postpone and easy to rot. They also argued that while the government's proposed carbon trading scheme might give the appearance of substantial action, in reality it hid generous concessions to industry, and could in fact contribute to greater investment in the fossil fuel sector through the combined impact of a very low carbon price and the abolition of Mandatory Renewable Energy Target.

Improving energy efficiency had a low profile within the climate change debate during 2007. However, advocates constructed it as the "hope of the side," arguing that it is the option offering the greatest opportunity to achieve short-term emissions reductions, and can actually be highly profitable. Despite these benefits, Australia's energy efficiency continued to decrease during 2007. While some businesses actively pursued energy efficiency, others were strongly opposed to regulations to improve energy efficiency, constructing them as impractical, unreasonable and an in-just imposition on both industry and consumers. The final option considered was reducing consumption. This tended to be presented in terms of the many small steps that can be taken by individuals to reduce their emissions. Climate change sceptics scorned such steps, maintaining that they are either trivial and ridiculous, or unreasonable, unjust and a threat to the very fabric of society. On the other hand, some climate change activists argued that far greater reductions in consumption are required, and that fundamental and radical changes in lifestyles and values will be needed to adequately address climate change.

## Chapter 10: Conclusion

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### 10.1 KEY FINDINGS

The aim of this thesis was to explore the social construction of climate change in Australia. Specifically, I investigated two key discourses within the climate change debate in Australia during 2007, and explored the different ways they constructed climate change and options for addressing the issue. 2007 was a particularly significant year in the Australian climate change debate. It saw increasing levels of public concern, the publication of the IPCC's Fourth Assessment Report, a major shift in the Australian Government's climate change policy, a federal election in which climate change was a key issue, and the election of a new government promising greater action on climate change. As a consequence, an unprecedented quantity of media, government and non-government texts about climate change were produced, providing the rich and varied source of data on which this study was based. This chapter will summarise the key findings from each chapter, then discuss some of the implications of the analysis and finally, reflect upon the contribution of this thesis.

Chapter 2 summarised crucial background information to contextualise the study. In particular, it outlined the scientific basis of climate change, discussed some of its main impacts, and described the international response to the issue. The overwhelming scientific consensus is that anthropogenic emissions of greenhouse gases are significantly altering the composition of the atmosphere and contributing to increased average global temperatures, with far-reaching consequences for precipitation, climate variability and the frequency of extreme weather events (IPCC 2007a:2-17). The impacts of climate change are already being experienced around the world, with glaciers and ice-sheets melting, sea levels rising, and snow cover and sea ice retreating. Changing climatic conditions have compounded existing threats facing ecosystems, increasing the number of species at risk of extinction. Climate change also has serious social and economic impacts, including population displacement as a result of rising sea levels, direct and indirect impacts on health, reduced agricultural productivity, and widespread water shortages (IPCC 2007b:8-18). The international response to climate change has been incremental and fraught with difficulties. By the early 1990s there was widespread recognition that global action was

needed to address the issue. However, despite the entry into force of the UNFCCC in 1994 and the Kyoto Protocol in 2005, progress in reducing emissions has been limited. Deep divisions within and between developed and developing countries continued to hamper negotiations for a post-Kyoto agreement throughout the 2000s (Stevenson 2009).

Chapter 3 reviewed the literature exploring discourses underpinning responses to climate change. It was argued that due to the complex, contested, and multi-dimensional nature of environmental issues, discursive approaches can make a valuable contribution to the field of environmental studies. Discourses can be seen to condition the way environmental issues are defined, interpreted, and addressed (Dryzek 2005:8-10). Discursive approaches to environmental studies promote an awareness of the process through which environmental problems are constructed, and seek to illuminate the implications of this process (Fiendt and Oels 2005:168). Many scholars have demonstrated the usefulness of discursive approaches to the study of climate change, and the literature highlights the diversity of historical and contemporary climate change discourses. These discourses have both prompted action and been used to justify inaction in relation to climate change. Scientific discourses about climate change have played a key role in conditioning public views and political responses. Non-government organisations have also made an important contribution in bringing the issue of climate change to prominence, forming and informing new discourses. At the same time, political discourses around climate change have become increasingly dominant, and the media play a crucial role in consolidating and communicating these different discourses and constructions.

Chapter 4 turned to the literature exploring the climate change debate in Australia between 1987 and 2007, identifying three main phases during this period. Australia exhibited early international leadership on climate change, advocating binding emission reduction targets. In 1990 the Hawke Government set a target to reduce emissions to 1988 levels by 2000, and Australia was one of the first countries to ratify the UNFCCC. However, the National Greenhouse Response Strategy adopted by the Keating Government in December 1992 had significant limitations, and saw no departure from 'business as usual'. Australia adopted an increasingly recalcitrant position at international negotiations, arguing that further commitments under the UNFCCC should be minimal. Elected in 1996, the Howard Government questioned the seriousness of climate change and refused to ratify the Kyoto Protocol. Domestically, Australia's climate change programs and policies relied heavily on

voluntary participation and failed to reduce the growth in Australia's greenhouse gas emissions, which continued to be among the highest per capita in the world. From 2005 onwards, a number of factors contributed to a significant shift in the climate change debate in Australia. Heightened public concern about the issue translated into a political shift with the government seeking to position itself as acting on climate change through its participation in the APP and by putting the issue on the agenda when Australia hosted APEC in 2007. Climate change also featured prominently in the 2007 election campaign, and in November the newly elected Rudd Government ratified the Kyoto Protocol.

Chapter 5 provided an overview of the methodology used to investigate the research questions. It discussed the research design process and the social constructionist theoretical framework utilised. Social constructionism is based on the premise that discourses play an important role in shaping social responses to issues. It argues that social realities are produced and made real through discourses, and that social interactions cannot be fully understood without reference to the discourses that give them meaning (Burr 2002:2; Phillips and Hardy 2002:2). A wide variety of texts were collected in order to gain insight the discourses shaping the climate change debate in Australia, including media texts, government texts, and texts produced by non-government organisations. Discourse analysis provides a powerful analytic tool to investigate the process of social construction. However, developing an operational analytic framework can be challenging. Drawing upon the work of Carvalho (2005; 2008), Dryzek (2005) and Lindseth (2004; 2006) among others, a four stage process was developed to facilitate the examination of texts, identification and characterisation of discourses, assessment of their relative influence, and consideration of potential options and outcomes.

The first stage of this process, examining texts, was reported in Chapter 6, which provided an overview of the climate change debate during 2007. It was found that an unprecedented number of media texts about climate change were published in 2007. These included many front page stories, feature stories, columns, editorials, and television interviews. This dramatic increase in media coverage was matched by a marked increase in political texts about climate change, and the quantity of material produced by international institutions, environmental organisations, industry associations and other groups. The year 2007 was very eventful in terms of processes and events relating to climate change, with the publication of the IPCC's Fourth Assessment Report, a series of high profile international

conferences, and a range of local events bringing climate change to prominence. Many different actors produced and were represented in the texts collected. It was found that politicians were the dominant actors within the climate change debate in 2007, followed by businesses and business representatives, environmentalists and environmental organisations, then scientists and scientific organisations.

Together, Chapter 7 and Chapter 8 addressed the first two research questions: identifying and analysing two key discourses informing and emanating from the Australian climate change debate, and considering how they constructed the issue of climate change. Chapter 7 presented a detailed analysis of the discourse of climate change activism. It was found that the discourse was based on five key arguments:

- Climate change is happening;
- Climate change is serious;
- Current responses to climate change are inadequate;
- Urgent action is need to address climate change; and
- Addressing climate change is achievable and affordable.

These arguments were promoted by a diverse range of actors including scientists and scientific organisations, environmentalists and environmental organisations, some journalists, some businesses and businesses representatives, and a number of other public figures and members of the public. Several key linguistic and rhetorical characteristics of the discourse were identified. Some actors used dry and cautious language, while others employed a dire lexicon, illness metaphors and war analogies to convey the nature and severity of climate change. Satire was employed to express the inadequacy of current responses, and the discourse contributed to the advent of several new words and phrases. Discursive strategies employed by activists included framing poor countries, poor people, and future generations as the victims of climate change. Energy intensive countries, companies, and consumers together with climate change sceptics were vilified, while countries, companies, communities, and individuals trying to reduce their emissions were framed as the heroes within the climate change debate. The discourse sustained five key constructions of climate change. Some participants constructed it as one of many environmental issues that need to be addressed, others as a crisis of unprecedented scale affecting every facet of the natural environment and human society. Between these two

extremes many climate change activists constructed the issue as an economic imperative or an opportunity. Less prominent, but equally powerful was the construction of climate change as a pressing moral issue.

Chapter 8 analysed the discourse of climate change scepticism. Five main arguments were identified:

- It is not known and/or not possible to know if climate change is happening;
- Climate change is not happening;
- Climate change is not caused by humans;
- Climate change is not serious; and
- We cannot and/or should not do anything about climate change.

Journalists played a central role in promoting these arguments in the media. Other actors participating in the discourse of scepticism included sceptic experts, some business representatives, some politicians, a number of other public figures, and a range of sceptical organisations and alliances. It was found that these actors used several distinctive linguistic and rhetorical devices, including a derogatory lexicon, religious metaphors, opposing lexical designations, the projection of authority and a colloquial vernacular. Positioning and relational strategies played a prominent role in the discourse of climate change scepticism. In particular, sceptics framed climate change scientists and activists as irrational, alarmist, corrupt, incompetent and hypocritical. Conversely, they framed themselves as rational, scientific, knowledgeable, noble and victimised. Key constructions promoted by the discourse included climate change as an unsubstantiated theory, a fallacy, a hoax and a conspiracy.

Chapter 9 first assessed the relative influence of the two discourses identified. It was found that climate change activism and climate scepticism were both sustained in the media throughout 2007. The influence of both discourses could also be traced through public, political and business responses to climate change. Public opinion polls revealed that a significant proportion of the public were concerned about the issue. However, a far smaller proportion took action to address their contribution to the problem by reducing their greenhouse gas emissions, and Australia's emissions continued to grow throughout 2007. There was a clear shift in government policy discourses away from climate change

scepticism in response to the ongoing public demand for action and the use of the issue by the opposition to win votes. However, many Coalition politicians, including Prime Minister Howard, continued to promote some of the arguments, and use many of the lexical and rhetorical devices characterising climate change scepticism throughout 2007. Labor's commitment to the discourse of climate change activism was also called into question by their refusal to set a short-term emission reduction target, their insistence that they would only commit to a post-Kyoto agreement that included binding commitments for developing countries, and their vocal opposition to a non-binding emissions reduction target at the Bali Conference in December 2007. Business responses were mixed, with some businesses actively seeking to reduce and offset their emissions, while others actively promoted the discourse of climate change scepticism.

Chapter 9 then addressed the third research question: considering the construction of possible options. The debate about what should be done to address climate change was extremely contentious during 2007. The Howard Government remained unstinting in its opposition to the Kyoto Protocol, constructing it as inadequate, unacceptable, failed and irrelevant. This construction was supported and amplified by a wide range of actors, particularly climate change sceptics. Together with these actors, the government sought to deflect criticism that it had failed to address climate change by attempting to shift attention to the APP and APEC, constructing both initiatives as more practical, effective, and realistic than the Kyoto Protocol. In contrast, critics constructed both the APP and the APEC declaration on climate change as tokenistic diversionary tactics, insisting that the Kyoto Protocol is a crucial step in the process of addressing climate change.

On the domestic front, both the government and the opposition were far more closely aligned. Both constructed carbon trading as the most efficient option to address climate change, a construction which was supported and reinforced by many participants in the climate change debate, particularly from within the business sector. On the other hand, critics argued that carbon trading is complex to administer, easy to postpone and easy to rort. They also argued that while the government's proposed carbon trading scheme might give the appearance of substantial action, in reality it hid generous concessions to industry, and could in fact contribute to greater investment in the fossil fuel sector through the combined impact of a very low carbon price and the abolition of Mandatory Renewable Energy Target.

Advocates for improving energy efficiency constructed it as the ‘hope of the side’. They argued that it was the option offering the greatest opportunity to achieve short-term emissions reductions, and could be highly profitable. However, while some businesses actively pursued energy efficiency, others were strongly opposed to regulations to improve energy efficiency, constructing them as impractical, unreasonable and an unjust imposition on both industry and consumers. Finally, the discourse of climate change activism promoted many small steps that can be taken by individuals to reduce their consumption. Climate change sceptics scorned such steps, maintaining that they were either trivial and ludicrous, or unreasonable, unjust, and a threat to the very fabric of society. In contrast, some climate change activists argued that far greater reductions in consumption were required and that fundamental and radical changes in lifestyles and values would be needed to adequately address climate change.

## **10.2 IMPLICATIONS AND CONTRIBUTION**

This research found that the discourses of climate change activism and climate change scepticism played a crucial role in shaping the climate change debate in Australia during 2007. As described above, the two discourses identified constructed the issue in dramatically different ways. Climate change activists argued that climate change is already happening and poses a serious threat. The fact that the issue achieved unprecedented prominence during 2007, with high levels of public concern, both the government and opposition committing to a range of new climate change policies, and many businesses announcing targets to reduce their emissions, can be seen as a measure of climate change activists’ success in effectively communicating their message.

However, the discourse of climate change activism was less successful in translating concern about climate change into substantive action, or instilling a sense of urgency about climate change within the community. It was widely acknowledged that both the government and opposition’s policies were not sufficient to achieve the significant reductions in emissions that are needed to address climate change. Australia’s emissions continued to grow, and even under the new Rudd Government, Australia continued to be obstructive in international negotiations. A combination of factors, including the drought breaking and the global financial crisis have since reduced the discursive sway of the

discourse of climate change activism, reflecting the trend away from public and political engagement that occurred in the mid 1990s, as described in Chapter 4.

Activists' limited success could be attributed in part to the success of the discourse of climate change scepticism. Throughout 2007 climate change sceptics constructed climate change as an unsubstantiated theory, fallacy, hoax or conspiracy, and argued that we should not do anything about it. Most, if not all, of the arguments made by the discourse of climate change scepticism can be shown to be false. However this did not diminish the pervasiveness of the discourse, nor its ongoing influence. As discussed in Chapter 8, the discourse was evident in the highest levels of government and certainly contributed to the Howard Government's long standing prevarication and inaction on the issue.

Climate change sceptics have been remarkably successful in sustaining this discourse in the face of incontrovertible scientific evidence supporting the arguments associated with climate change activism. This can perhaps be attributed in part to the discourse's chameleonic nature, with its proponents changing their arguments in response to changing circumstances. In this context, it was observed that there has been a shift away from the argument that climate change is not happening towards more amorphous arguments associated with the discourse, particularly that climate change is not *serious* and therefore does not necessitate action. This new manifestation of climate change scepticism is arguably implicit in any inaction on climate change, and as such is far more pervasive than narrower definitions of the discourse would suggest. It poses a unique threat for two reasons. Firstly, because it dovetails with the inherent inertia that sees society resist any change to the status quo, particularly if the change requires a major effort or a change in values. Secondly, it cannot be as easily rebutted as the earlier arguments. Ultimately, whether or not climate change is considered to be serious depends on whether what it impacts upon is valued.

As discussed in Chapters 2 and 7, it is the poorest countries that will be worst affected by climate change. It is the people in these countries together with poor people in all countries and future generations that are framed as the victims of climate change by the discourse of climate change activism. While not immune from the impacts of climate change, wealthy countries and wealthy people in all countries are far better able to absorb the costs and adapt to the consequences of climate change. It is clearly not enough to say that millions of people will lose their homes and livelihoods or die of hunger and disease, or that species

will go extinct, because all of these things are already happening and have been happening for decades independently of climate change. People have known about these issues for a long time but there has been no significant or successful attempt to stop poverty, hunger, habitat destruction and species extinction. Perhaps then, it is counterproductive to construct ‘the other’ as the victims of climate change because they are already the victims of so many social and environmental issues and this hasn’t motivated citizens within developed countries to resolve these problems. Simply communicating the dire consequences of climate change is not enough. Climate change, and options for addressing the issue, need to be constructed in new and different ways, ways that resonate with peoples’ lives and values, to stimulate and sustain meaningful action to address the issue.

This thesis contributes to the scholarship around social responses to climate change in three ways. Firstly, it illuminates the social construction of climate change in Australia, thereby contributing to the literature exploring the social construction of climate change which was reviewed in Chapter 3. Secondly, through providing a detailed analysis of the discourses of climate change activism and climate change scepticism in Australia, this thesis makes an original contribution to the literature examining the climate change debate in Australia which was reviewed in Chapter 4. It was found that a discursive approach can offer unique insights into environmental issues, but that there is a paucity of practical advice as to how to do discourse analysis within environmental studies. Thus the final contribution of this thesis is the unique model for undertaking discourse analysis that was developed in Chapter 5. This model offers a valuable tool that can be used to investigate climate change discourses and their implications.

### **10.3 FUTURE DIRECTIONS**

This thesis highlights several possibilities for future research. Despite the overwhelming scientific evidence that urgent action is required to address climate change, climate change continues to be a highly contested issue in Australia, and Australia’s response to climate change continues to be drastically inadequate (MacCallum *et al.* 2013:1; McKewon 2012:277). As such, there is a need for ongoing research investigating the discourses framing and constraining this response.

One of the limitations of this thesis is that it has only analysed two discourses, so there is considerable scope for using the model of discourse analysis developed in Chapter 5 to identify and investigate additional discourses informing the Australian climate change debate. The broad discourses of climate change science, climate change politics and climate change business would provide fruitful subjects for further research. At the same time, a more fine-grained approach could offer valuable insights into more specific discourses, such as those associated with climate change refugees, climate change justice, the threat of rising sea-levels, increasingly frequent fires and floods, and species extinctions as a result of climate change.

A second limitation of this thesis is that it is only examines data up to 2007. There is therefore the potential to extend the analysis up the present day, with two subsequent changes of government offering a rich source of material to examine the impact of changing political discourses on the public debate and policy outcomes. In this context, the detailed analysis conducted in this thesis could provide the basis for a comparative study with more recent constructions of climate change and options for addressing the issue.

There is also the possibility to further refine the model of discourse analysis to better allow the influence of discourses to be discerned, and distinguished from other discursive and non-discursive factors. This could in turn facilitate the expansion of the analysis of the discourses of climate change activism and climate change scepticism presented within this thesis to achieve a better understanding of their influence on the climate change debate in Australia. Undertaking interviews with key participants in the climate change debate could also offer the opportunity to delve deeper into the two discourses and gain further insight into the motives and motivations of actors.

Finally, I believe there is a need for further research to investigate the potential for current and future discourses and constructions to contribute to creating opportunities for more effective responses to climate change in Australia. Given the seriousness of climate change and the urgent need for action, it is crucial that we further improve our understanding of the discourses framing and constraining responses to the issue, and ways in which barriers to effective action can be overcome.

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