THE ROLE OF SUBJECTIVE FACTORS IN LOCAL AUTHORITIES' ACTION ON CLIMATE CHANGE IN SOUTH WEST ENGLAND

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Abstract

This study examines the question of whether subjective attitudes to climate change play a significant part in the determination of local authorities' policy and actions on climate change mitigation; whether the personal views of council members and officers about climate change, their beliefs, fears and attitudes affect the outcomes in terms of policy and action, or whether organizational culture, norms and collectively policed limits to discourse have this effect; or whether, on the contrary, the influence of central government policy is so overwhelming that action and policy is determined almost wholly by external and objective influences. The research fills a gap in the literature in studying both subjective attitudes and socio-cultural factors together with external and material factors in order to assess the importance of the former.

Interviews with officers and members of local authorities in the South West of England and other data identify that considerable reductions in councils' own greenhouse emissions have been achieved, not wholly due to cutbacks and other contextual factors, but policy for more widespread carbon reduction in their geographical areas was more limited. Central government finance and policy were key determinants of action in all the local authorities studied, but significant differences between authorities are linked to differences in the prevalence of climate change dismissal.

Psycho-social methods are used to achieve a more subtle and coherent view of individual attitudes to climate change, to identify relevant aspects of corporate culture, and to tease out how objective influences such as financial incentives and political pressures interact with these attitudes.

The study finds that climate dismissal and denial present obstacles to carbon reduction initiatives and reduce the number which emerge; it also identifies the way organizational culture, including the growing dominance of financial and economic discourse, can constrain possibilities and proposals. Based on the interview data, I argue that financial incentives not only encourage but enable discussion of carbon reduction measures, and that severe budgetary constraints undermine a sense of agency as well as curtailing long term ambition in carbon reduction. Perceived lack of agency, at times deployed as a 'tool of innocence', also emerges as a key contributor to climate change dismissal, as well as more specific political and personal attitudes. Implications for policy at local and national level are derived from the research findings.

Contents

Appendices

List of Figures

List of tables Page

List of Abbreviations

BREEAM	Building Research Establishment Environmental Assessment Methodology
CDM	Clean Development Mechanism, an international carbon trading mechanism
CHP	Combined Heat and Power
COP	Conference of the Parties, the annual talks under the UNFCCC process
CRC	Carbon Reduction Commitment
DCLG	Department for Communities and Local Government
DECC	Department of Energy and Climate Change
DEFRA	Department for Environment, Food and Rural Affairs
FIT	Feed-In Tariff, a subsidy for each unit of electricity generated by renewable technologies offered to encourage microgeneration by households and small businesses
IPCC	Inter-governmental Panel on Climate Change
GHG	Greenhouse gases
NGO	Non-governmental organization
NI	National Indicator
NPPF	National Planning Policy Framework – introduced in UK in 2012
REDD	Reducing Emissions from Deforestation and forest Degradation, a UN programme allowing carbon offset payments for maintaining forests.
RSA	Royal Society of the Arts
UNFCCC	United Nations Framework Convention on Climate Change

Introduction

In May 2013 carbon dioxide levels in the atmosphere crossed the 400 parts per million (ppm) mark, the highest level in human history (Dessler 2012). This marker indicated the speed with which the earth is moving towards the dangers of an abrupt change in climate, dangers documented with increasing confidence over the last decades. The measurement, from the Mauna Loa observatory in the Pacific, figured in media reports for a couple of days. On the one hand the news item seemed to confirm the perception that unwelcome changes in global climate phenomena were afoot and to emphasize the need for decisive action to slow down and reverse the trend; and on the other, to elicit boredom with yet another proto-apocalyptic warning. Among the phenomena investigated, this study explores the phenomenon of climate dismissal, of which boredom is one manifestation.

As media coverage of climate change began to intensify during the mid 2000's the public was presented with vehement scientific argument and (incompatibly) reassurance. However, within most political and social discourse the subject was notable by its absence (Marshall 2006 for UK, Norgaard 2006 for Norway). Why was climate change not addressed in energy policy, pensions policy and in decisions about investment and the future effectively embodied in the Treasury advice on discount rates for project assessment? Why were local authorities more likely to be talking (eventually) only about adaptation to climate change rather than mitigation?

In time, policy on climate change mitigation did emerge, against a backdrop of intense public campaigning and concern. A few local authorities had already adopted policies on climate change and developed effective carbon reduction programmes, while however, many responded in the most minimal way to the incentives and monitoring which developed in the later 2000's. One of the questions addressed by researchers on the policy process in this field was, how could national policy be more effective at the local level? Grassroots movements had generated a variety of initiatives promoting environmental sustainability in many local authorities in the period after 1992, some under the banner of Local Agenda 21, and questions have been raised as to how effective these movements and community groups have been, not only in catalyzing individual efforts and community projects but as contributors to resource saving and carbon reduction action through local government? (Laughton 2003).

In order to answer some of these questions it seemed appropriate to investigate what local authorities in my own part of the UK were doing to respond to the then government's policy on climate change mitigation to deliver the reductions in greenhouse emissions required by the Climate Change Act 2008, and what some of the major influences and limits on this action might be. The literature examined in Chapter 1 indicated that it would be necessary to include consideration of subjective attitudes as well as more obvious regulatory and contextual influences on policy and action, and these seemed to be absent from many of the studies of public bodies' activities on environmental issues. In particular, Dietz et al (1998) found that social psychological variables, including beliefs, attitudes and worldviews explained individual pro-environmental behavior better than social structure or political beliefs on their own. There is an absence of studies on attitudes to climate change in local authorities in UK, and the literature on individuals suggests these socio-psychological variables may be important in explaining what local authorities are doing. We do not know whether action on carbon reduction is affected at all by the subjective attitudes of agents in local authorities towards climate change, or whether it is principally or exclusively determined by central government policy and the structure of incentives produced by it and prevailing in the organizations concerned.

Thus, this study explores the widely divergent attitudes to climate change found in UK local government today through the voices of a sample of councillors and officials in local government. The focus is on measures taken by local authorities to reduce carbon emissions, with specific focus on South West England, as one significant link in the chain of world-wide efforts to minimize and arrest the process of climate change. My aim is to develop the findings of existing literature on how local authority decisions on this and other topics are determined, by introducing and exploring in field research perspectives from psycho-social research and the psychological determinants of environmental behaviours. Thus it will be possible to include organizational cultures and individual worldviews and motivations in the study of influences on local authority policy and action on carbon reduction. To set this in context it will also explore the role of central government policy, local interests and pressure groups, and structural features of the organization upon policy outcomes, and seek to discover how these material and subjective influences are interlinked.

This introduction has four main themes that set the context for the analysis of the research. First it establishes the importance of examining the role of local governments in tackling climate change;

secondly it sets out the main research questions that structure the thesis; thirdly, it briefly rehearses the nature of climate science and how it provides the basis for policy; finally, it considers how the response to the issue has been contested and outlines the variety of viewpoints about climate change which are investigated in the course of the research.

I. **Policy development in a world of multi-layered governance**: **the role of local authorities**

Existing literatures tend to look at action to counter climate change either through an analysis of national and international politics (see Giddens 2009, Moser and Dilling 2007), or through investigating the determinants of individual behaviour change (Lorenzoni et al 2007, Mayne et al 2012). The intervening level of organizations and local authorities is however attracting increased attention, with growing recognition that environmental and climate governance is multi-level, and that a significant role is played by local authorities, public pressure groups and business organizations (Ballard 2005, 2007, Bulkeley and Betsill 2005 and 2013, Rayner 2010, Green Alliance 2011, Committee on Climate Change 2012b, Lowndes and Pratchett 2012).

Most of the analysis of organizational action on climate change mitigation is formulated in terms of contextual factors (as in the literature above), central government policy, and prevailing ideologies which influence it. For example Lowndes and Pratchett and Rayner assert that the impact of central carbon reduction policy in the UK in the mid 2000's has been limited by the prevailing ideology of ecological modernization, which has in turn led to a failure to give serious attention to demand side measures. Compared to the analysis of individual environmental behaviour, there is little focus on the subjective attitudes of those whose task is to carry out national policy or to how this interacts with wider political, economic or other contextual factors.

Lipsky has argued that the formation of policy as well as implementation is carried out partly by local actors and 'street level bureaucrats' (1980), and it is clear that local as well as national government plays a formative role in this case. Local administrations, because they tend to be preoccupied with conflicting responsibilities and regulations issued from above, pressured by public opinion, and influenced by the opinions and worldviews of their staff, filter and partly determine the policy which is actually implemented in local areas. In the literature on psychological responses to climate change there is discussion of the relevance of systematic and typical human responses to loss and change,

which might be expected to operate at organizational as well as individual levels. It is the purpose of this study to attend to how individual attitudes and personal responses interact with wider conditioning factors in the determination of practical action on carbon reduction.

In the UK, policy has sought to induce businesses and local government to take on some of the responsibility for cutting greenhouse gases. I discuss the evolution of UK policy in Chapter 3, and while there are many influences at national level, discussion of these can be complemented by attention to the political process surrounding climate change policy at a local level and to the role of subjective attitudes and concerns at this level.

II. Research Questions

The principle aim of this research is to discover the role in determining action or inaction on climate change mitigation of cultural and subjective influences within the organization itself and in the wider social milieu, given the impact of central government policy and local politics.

In Chapter 1, I indicate that, although crucial to carbon reduction, there is a paucity of research and systematic information on how far local authorities have implemented explicit carbon reduction policy on the ground and what explains this action or lack of it. In addition to sparsity of factual data on carbon reduction in local authorities, what is missing in many studies is the inclusion of subjective factors to help explain this. A salient possibility is that concerns about climate change inject urgency into action on carbon emissions, or that conversely, dismissal or denial of climate change restricts implementation of national policy. It is vital to investigate both individual attitudes to climate change and corporate culture as it affects policy, because, in the words of Zerubavel 'denial is socially organized' (2006), and organizations contrive to deny things that individuals within them acknowledge privately. In Chapter 5 the main findings are reported and I give examples of how corporate denial manifests itself, and how it can be both reinforced and dispersed.

It is also possible that concrete objective and subjective influences interact with one another. World views and discourse about climate change may be affected by government policy and financial incentives, and beliefs may affect the evaluation of technical possibilities. Thus it is also important to

try to identify *how* subjective factors affect policy and action, and how political and financial circumstances affect the relevant attitudes.

The study thus focuses on three core research questions (discussed more fully in chapter 1):

1. What is the role of subjective factors such as individual attitudes to climate change and corporate culture, in determining carbon reduction policy and action in local authorities?
2. Does climate change denial exist? How can it be explained?
3. How does the influence of subjective factors interact with contextual factors such as central government policy, local political realities, and institutional structure?

In order to answer these questions it will also be necessary to discover

- What climate mitigation policies have been adopted and what has been the impact of measures carried out in local authorities in the South West?
- What variations exist between authorities? How can these variations in the policies and projects of differing authorities be explained?

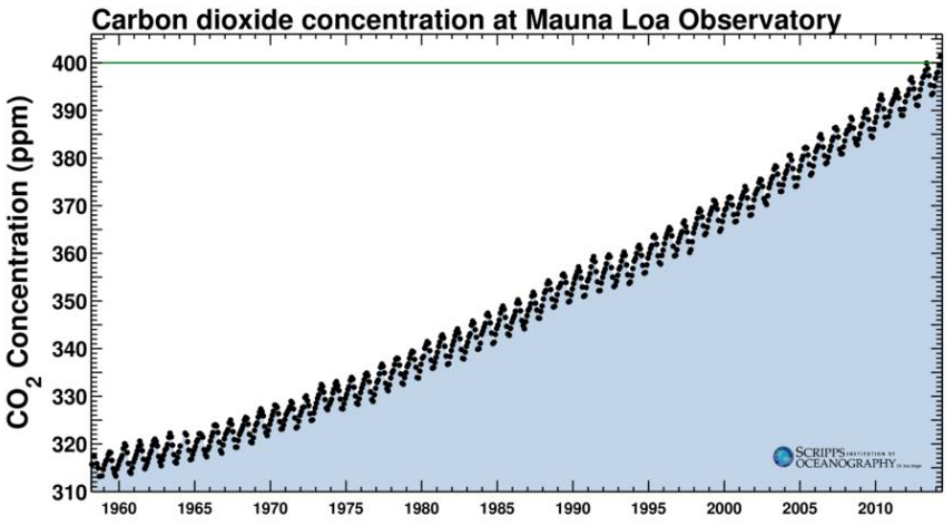
To begin, however, and to evaluate the significance of the crossing of the 400 ppm threshold, it is helpful take a backward glance at the development of human awareness of climate change, and the growing scientific understanding of how atmospheric concentrations of greenhouse gas relate to levels of impact and risk for the world's population.

III. Climate science and the basis for policy

The possibility that human carbon emissions could influence the climate was first noticed by Arrhenius in 1906, and again noted, with more evidence, by Guy Callendar in 1938 (Hulme 2009, Dessler and Parson 2006). Heat from the sun was understood to be trapped by greenhouse gases in the atmosphere, enabling global temperature to rise to a level which could sustain life. The increase of such gases from human fossil fuel use would result in further warming. During the 1960s and 1970s evidence for an enhanced greenhouse effect accumulated and Charles Keeling's daily readings of CO2 levels in Hawaii, was able to track increasing concentrations in the atmosphere. This has been encapsulated in the well-known 'Keeling Curve' (see figure 1) that indicates the steady saw-tooth rise

in concentrations of carbon dioxide. Levels fall annually during spring and summer as vegetation on the more extensive land area of the northern hemisphere flourishes and absorbs CO2, and rise during the northern winter, displaying nevertheless and overall upward trend.

Figure 1 The Keeling Curve



Source: Scripps, http://keelingcurve.ucsd.edu/ Reproduced with permission of Scripps Institution of Oceanography, University College San Diego.

By the early 1980's scientists were increasingly aware of the likelihood of warming, and began trying to persuade governments to attend to the problem, with little success. In 1987 hurricanes over southern England felled hundreds of trees, and in 1988 extreme drought conditions in the USA combined with a number of high profile statements by groups of scientists and testimony to Congress brought global warming to political and media prominence (Leggett 1999, Hulme 2009).

In 1988 the International Panel on Climate Change (IPCC) was set up jointly by the United Nations Environment Programme (UNEP) and the World Meteorological Organisation (WMO) – under the auspices of the United Nations - to bring together the work of hundreds of scientists worldwide, to assess the scientific findings on climate change, the likely impacts, and the potential to mitigate

climate change by reducing emissions (Dessler 2012). (Mitigation is the term used to indicate reduction in the emissions of greenhouse gases below the level which would be expected in business as usual scenarios, in contrast to adaptation, which refers to the adoption of measures to reduce the impact of climatic changes.) Five IPCC assessment reports, reflecting prior research over the previous decade and more, were issued in 1990, 1995, 2001, 2007 and 2013/14. They show relatively little change in the projections of changes in headline magnitudes (such as projected global average temperature change and anticipated rise in sea level), though becoming ever more precise and discriminating in the description of impacts. In Arctic latitudes average temperatures have risen at approximately twice the global average rate (IPCC Fourth Assessment Report 2007) . However the time-lags in the response of earth's systems to rising concentrations of greenhouse gases (IPCC Third Assessment Synthesis Report) means that further warming to about 1.5° is already unavoidable (IPCC Fifth Assessment Report,Synthesis Report, Summary for Policy Makers 2014)

By the mid 2000s, climate change had emerged onto the policy and political agendas of governments, including that in the UK. (Lorenzoni et al, 2007). How can we avoid dangerous climate change? Tony Blair asked this question of the world's climate scientists, assembled at the Exeter Met. Office for the conference 'Avoiding Dangerous Climate Change' in 2005. The conference examined the likely impacts at different levels of temperature change, and saw the initiation of a policy consensus that these impacts - such as storminess, sea level change, greater probabilities and severities of floods, droughts and impacts on food production and biodiversity - could be considered unacceptably 'dangerous' if global temperature averages increased by more than 2°C degrees over the pre-industrial level. By 2009 most governments in the world had endorsed the 2°C degrees policy goal and it was enshrined in the final statement from the Copenhagen Conference of the Parties to the UN climate negotiations.

Early estimates by scientists suggested that global atmospheric concentrations of CO2 should not exceed 550ppm to achieve a reasonable chance of remaining below 2°C (see for example Jenkins et al, 2005). Later reports, including those of the IPCC, modified this estimate to 450 ppm and below. It is well understood that the climate takes a long time to adjust to 'forcing' ie increases in greenhouse gases in the atmosphere, but scientists are uncertain how great the sensitivity of the climate reaction will ultimately prove to be. Paleoclimatic studies suggest that it is greater than most models had allowed for by 2007, though greater sensitivity is appearing in later models reflecting positive

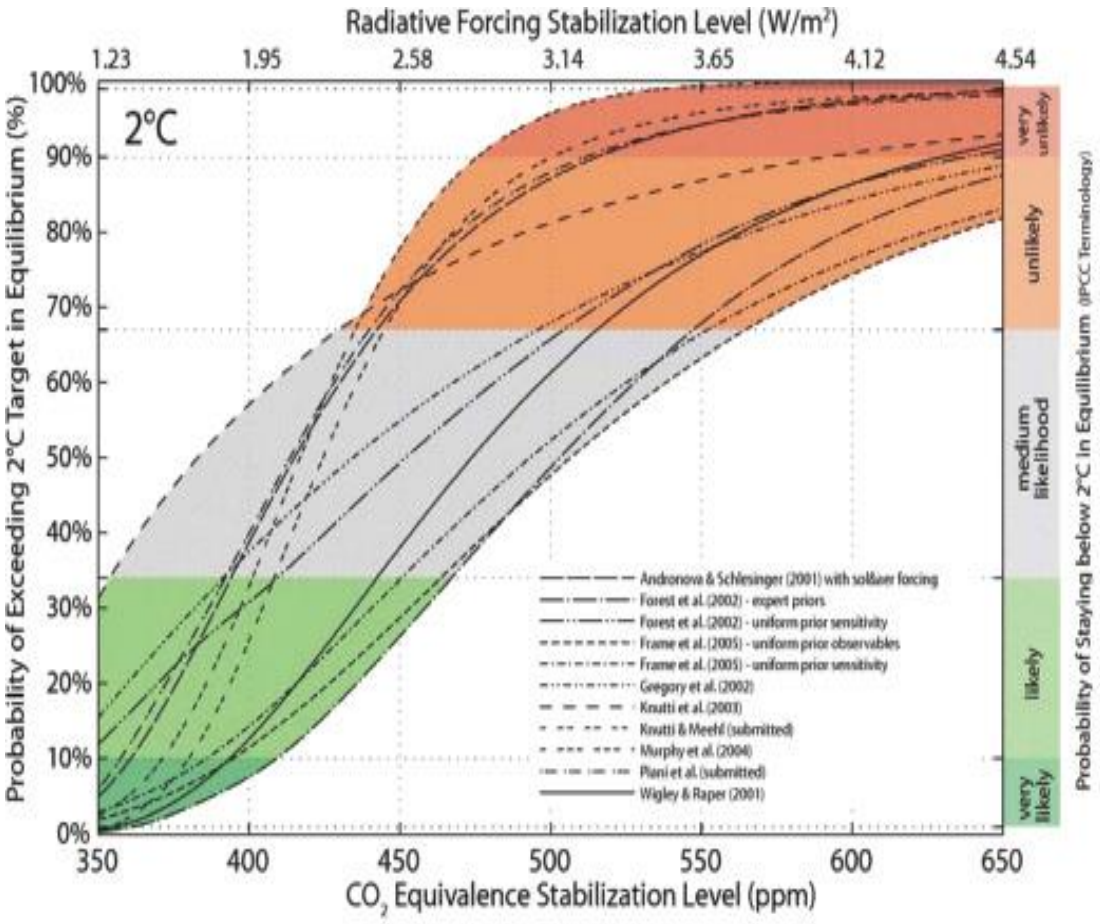
feedbacks in the system as the evidence of it appears in fact (Lynas, 2008, Ridley 2011). 'Positive feedback' refers to the way in which warming can cause further warming, by, for example, reducing the extent of reflective ice and snow, release of methane from unfreezing permafrost, die-back of forest cover or loss through increased fires.

Figure 2 below shows, firstly, that the outcomes of several models have been mapped to show the effect of uncertainty about climate sensitivity. Each line represents the way that rising greenhouse gas content in the atmosphere is associated with a rising probability of exceeding a 2° global temperature increase, in a particular model. The forcing, or warming influence shown on the horizontal axis, in this case is measured in parts per million of carbon dioxide equivalent, CO2e, a figure which aggregates greenhouse gases – carbon dioxide, nitrous oxide, methane and others, into an effect equivalent to a level of CO2 in the atmosphere. The vertical axis shows the probabability of global temperature increase exceeding 2°C. The Figure shows that to have more than a 66% chance of staying below 2°, the level of 'CO2-equivalent must be [stabilized] below 410 ppm for the majority of considered climate sensitivity uncertainty distributions (range between 350 and 470 ppm).' (IPCC 2007 WG2.19.4.2.2 p 800)

Yet already in its 2007 Fourth Assessment Report, the IPCC was warning that if warming were not kept below two degrees centigrade, then substantial global impacts would occur, such as species extinctions, and millions of people at risk from drought, hunger and flooding. (Milmo 2007). The level of greenhouse gases measured as 450 ppm CO2e is roughly equivalent to the situation when CO2 is at 400 ppm in the atmosphere, as in 2013. Global emissions currently increase atmospheric levels at the rate of about 2.75 ppm per year – faster than the average for the late 20th century.

Thus, as numerous scientists point out, rapid reversal of this trend is required to retain the chance of keeping global temperature increase from averaging above 2 degrees (see Anderson and Bows 2011).

Figure 2: Likelihood of exceeding equilibrium temperature threshold of 2°C above pre-industrial levels



Source: IPPC (2007) Fourth Assessment Report, Working Group II, Impacts Adaptation and Vulnerability, *Figure 19.1. Probability (see 'Key caveat' below on low confidence for specific quantitatitive results) of exceeding an equilibrium global warming of 2°C above pre-industrial (1.4°C above 1990 levels), for a range of CO_2-equivalent stabilisation levels. Source: W.Hare and M.Meinshausen (2005), 'How Much Climate Change are we committed to and how much can be avoided', Climatic Change vol 75 1-2 pp111-149*
Key caveat: The analysis in Figure 19.1 employs a number of probability distributions taken from the literature. The WGI AR4 has assessed the body of literature pertaining to climate sensitivity, and concludes that the climate sensitivity is 'likely' to lie in the range 2-4.5°C, and is 'very likely' to be above 1.5°C (Meehl et al., 2007 Executive Summary). For fundamental physical reasons, as well as data limitations, values substantially higher than 4.5°C still cannot be excluded.

The increase in weather extremes, threats to the production of food and the availability of water which were foreseen earlier are now occurring (see Lal et al, 2005; Met Office Hadley Centre, 2005a

& b, 2009; IPCC 2014). In the current circumstances of increasing population and demand for staple food commodities, the increase in variability of weather is partly responsible for the erratic and rising food prices seen in recent years (Carty and McGrath 2013). These in turn, along with rising energy prices, play a part in undermining the growth in consumer demand essential for continued economic growth.

As the insurance industry has been making clear, the costs of climate change include the rapidly rising weather-related disasters and the cost of related pay-outs. Nicholas Stern has pointed out the high economic costs of continued climate change), only to remark later that he had underestimated the speed of change, and hence the costs, in his famous review (Stern 2006 & 2009).

Indeed, as the urgency of emissions reduction has become more apparent over three decades of climate science, the evidence has also accumulated that 'dangerous' impacts of climate change are being felt and will intensify well before the 2 degree level of warming. AOSIS, the Alliance of Small Island States, aware that their existence is at stake from sea level rise, argues that the target for world policy should be to maintain global temperature increase below 1.5°C above the pre-industrial level (AOSIS 2014, Betzold 2010)

The latest reports from the IPCC 5th Assessment suggest that

> Impacts from recent climate-related extremes, such as heat waves, droughts, floods, cyclones, and wildfires, reveal significant vulnerability and exposure of some ecosystems and many human systems to current climate variability (very high confidence). Impacts of such climate-related extremes include alteration of ecosystems, disruption of food production and water supply, damage to infrastructure and settlements, morbidity and mortality, and consequences for mental health and human well-being (IPCC 2014, WGII Summary for Policy Makers p 7)

In the view of several climate scientists, including Rejendra Pachauri, Chair of the IPCC, an appropriate target for the level of carbon dioxide in the atmosphere would be 350 ppm (McKibben 2009). As Hansen et al (2008) note,

> If humanity wishes to preserve a planet similar to that on which civilization developed and to which life on Earth is adapted, paleoclimate evidence and ongoing climate change suggest that CO2 will need to be reduced from its current 385 ppm to at most 350 ppm. The largest uncertainty in the target arises from possible changes of non-CO2 forcings. An initial 350 ppm CO2 target may be achievable by phasing out coal use except where CO2 is captured and adopting agricultural and forestry practices that sequester carbon. If the present overshoot of this target CO2 is not brief, there is a possibility of seeding irreversible catastrophic effects (Hansen et al 2008, p. 217)

IV. Contestation and Response

The development of climate science has not been without controversy. Debates about the mechanisms at work, the degree of warming and its associated impacts in the geological past and the human future, have been overshadowed by debates about, first, the existence of warming, and more lately, its anthropogenic causation.

The sceptical views put forward by bodies such as the Heartland Institute and the International Climate Science Coalition, and individuals such as Senator Inhofe and Nigel Lawson, though unsupported by the vast majority of scientific research, have been profoundly influential on climate change policy in the US and latterly in the UK (see McCright and Dunlap 2003; Monbiot, 2013). Funding for the Heartland Institute and some other climate sceptic institutions has been shown to come largely from fossil fuel and other commercial interests, and to involve personnel who had formerly been involved in the campaign to cast doubt on the connection between smoking and lung cancer (Leggett 1999, Heartland Institute 2012, Monbiot 2012). However sceptical beliefs about climate change retain wide currency. The view that climate science is 'bunk' and was being propounded for political reasons in order to retard development in poor countries was aired on Channel Four's programme *The Great Global Warming Swindle* in 2007. This provoked 256 complaints of misrepresentation of facts and of individual scientists' views. Ofcom upheld some of the complaints, including one from the chief scientist Sir David King about the portrayal of his opinions in the programme (Offcom, 2008). In 2009 a scandal emerged about the alleged reluctance to reveal data by the Climatic Research Unit at the University of East Anglia. Although the unit was subsequently largely exonerated by an inquiry led by Lord Oxburgh, the incident has been cited by parliamentarians who cast doubt on the work of the Met Office Hadley Research Centre (Monbiot 2012).

These debates received ample media coverage, but nevertheless majorities of citizens in both the US and the UK remain concerned about climate change. Chapter 1 summarises international research which shows that large proportions of the public in many countries, including the wealthier and industrialized world, believe climate change is a pressing problem and support policies to mitigate it (AXA/IPSOS 2012). Concern about climate change is not the preserve of elites and wealthy nations.

Rather the reverse: in some developing nations rural populations seem more aware of climate change as a challenge to survival than do governments. Moreover concern was higher in a variety of developed and newly industrialized countries than in the UK and the US.

Governments have devoted much attention to climate change, but despite the global manifestation of concern, policy responses to the developing science of climate change have often been described as rather slow (Leggett 1999, Parry 2008, Anderson 2009, Hale 2008, Giddens 2009, and Moser and Dilling 2007). On the other hand, some have portrayed state intervention as unwarranted and even concealing a tacit drift towards socialism (eg. Delingpole 2011). Chapter 3 describes briefly the development of international policy, beginning with the Framework Convention on Climate Change, signed in 1992 and through the tortuous negotiations for the Kyoto Protocol and its ratification in 2005, to the current protracted negotiations aimed at producing a successor agreement by 2015 with commencement planned for 2020.

V. Outline of the thesis

The research questions are more fully explained and related to different theoretical strands appearing in the literature reviewed in Chapter 1. Research directed to understanding responses to climate change is found in many disparate fields, from political science, sociology and social policy to psychology and economics. The implications of these literatures for the potential influence of subjective factors on local authorities are reviewed to derive the detailed questions on which this research study is based.

Chapter 2 describes the methodological approaches used in the research, a qualitative study based upon semi-structured interviews and documentary research carried out between 2009 and 2013. I argue that there are strong reasons for using the tools of psychosocial research in this unusual context, in order to identify not only individual attitudes to climate change but also some of the underlying meanings involved and the functions which statements about climate change perform. I outline the theoretical basis for these methods and review related ethical issues, before describing how the interview schedule, the sample and field work were designed.

Chapter 3 traces the development of national UK policy on climate change, as a background to the research study. It outlines the responsibilities placed on local authorities to contribute to mitigation efforts and to account for this in reports to central government. Chapter 4 describes what local authorities in South West of England are doing to achieve reductions in carbon emissions, and seeks to compare the policies and actions observed in contrasting authorities. It also assesses the role of internal objective factors and of external contextual influences on climate mitigation policy.

The role of subjective factors is tackled in Chapter 5, the main findings chapter, drawing particularly on interview material to illuminate individual attitudes and corporate culture as they affect the salience and nature of mitigation measures adopted. Further analysis of the results reported in chapter 5 appears in Chapter 6, where I draw out the conclusions for the research hypotheses and the implications for the various theoretical approaches to the question discussed in Chapter 1 and reflect on the methodology employed. Chapter 7 summarises the conclusions.

Chapter 1: Rationality, Denial and Responses to Climate Change: some theoretical perspectives

There are plenty of problems in the world, and doubtless climate change - or whatever the currently voguish phrase for it all is - certainly is one of them. But it's low on my list.

P. J. O'Rourke

I introduce this chapter with some examples of the way in which environmental resource management has failed or has succeeded in historical situations. In the rest of the chapter I identify the absence in the literature of studies of organizational behavior on climate mitigation which assess both contextual factors and cultural, psychological and socio-psychological levels of causation. The research questions are therefore focused on this area. I examine some major theoretical approaches to the study of organizational decisions and behavior, consider their applicability to climate mitigation, and conclude with a summary of the influences and their manner of operation posited by these various approaches, which informs the design of the research study.

1.1 Preface: Some historical examples of environmental resource management

In the little seaside town of Whitby, overlooking the fish and chip shops, the amusement arcades and the lobster pots along the quay, is a much extended church on the cliffs with pillars and galleries, where congregations in the hundreds must have made many a prayer for the safety of those at sea. The history of Whitby has not been one of general prosperity, but of boom and bust. Since it grew from a small fishing village, livelihoods have depended heavily on natural resources. In the early 17th century alum works along the coast brought a new wealth and rapid development, only for the works to collapse when the alum deposits were exhausted. In the 18th century the town developed a shipbuilding industry. In the 1790's it was the third shipbuilding port in England, after London and Newcastle (White 1993). From the 1753 onwards whaling began in the waters of Greenland, and the new wealth brought an era of growth and prosperity, until whales too were commercially extinct. By 1831 only one whaling ship remained. Whitby is still a port but its largest source of income is as a tourist destination.

Jared Diamond, in his book Collapse (2005), documents other examples of how the fate of civilizations has depended crucially on the health of ecological systems, and how many of them failed to maintain this. In Easter Island, one of the best known examples, destructive pressures upon the environment came from the competitive erection of monuments by rival clans. This necessitated enormous human energy and the employment of heavy logs to move the monuments from the quarry to their platforms. Social and cultural rivalry among a population of some 15,000 led to overexploitation of the forest, which gradually disappeared; canoes could no longer be built, fish were unavailable as a food source. All of the native bird populations seem also to have been hunted to extinction. When European mariners arrived in the eighteenth century, the islands were home to a couple of thousand poor farmers. The Rapa Nui people's later grievous reduction to 211 was a result of slave raiding and disease, but there is little doubt that the loss of biodiversity had led to the earlier decline. All that remained of their predecessors were the huge stylised stone heads gazing impassively out to sea.

Figure 3: Stone heads on Easter Island

Source: Photograph by Michael Dunning/Getty Images. Available from *http://travel.nationalgeographic.com/travel/countries/chile-photos/#/easter-island-statues_8858_600x450.jpg*
Reproduced with permission of Michael Dunning

So there is ample evidence of humanity's myopia about the need to preserve its ecological basis, and climate change is only one case among many. But the historical evidence leaves us unsure in many of these examples, as to whether the people involved in these catastrophes were aware of the trends to which they were contributing, or were aware of the trends but ignorant of the mechanisms at work and their own contribution; or whether despite knowledge of both these things institutional or political structures, economic privilege or the boundaries of tradition, prevented remedial action being taken. How was it that the tiny island of Tikopia was able to take the drastic decision to massacre it's pigs, and to limit its population, thus preserving its ecology and ensuring the survival of its society, while Easter Islanders did not? Why did the aristocratic rulers of Japan ensure the preservation of its forests, while the elites of Indonesia do not? (Diamond 2005)

These stories provide a not wholly auspicious background to my investigation about the current response to the contemporaneous issue climate change. In the present situation however, much attention has already been devoted to identifying the factors which influence this response, some of it summarized below, and through this understanding attempts are being made to facilitate effective measures and remove obstacles to climate change policy.

1.2 Introduction

I have documented in Chapter 3 how global greenhouse gas emissions have continued to increase; and even in the UK, though national statistics show that geographic emissions have fallen since 1990, they have risen steadily when consumption data are used (Clark 2011). Part of the explanation for this must be sought at the level of organizations. What is the place of greenhouse emissions reduction in the goals and priorities of businesses, local government and public sector organizations? How do they respond to central government policy on these issues? What role do individual worldviews and corporate culture play in this?

While literature on individual motivation and behaviour addresses subjective factors such as worldview, beliefs and values (eg, Dunlap and Vanliere 1978, Stern & Dietz 1994,Stern 2000, Dunlap 2008) cognitive processes and psychology (Kolmuss and Agyeman 2002, Kahneman 2003, Norgaard 2010, Mayne et al 2012) this perspective is rarely included in the study of action on climate change in these organizations, which account for and control a large proportion of greenhouse emissions, both directly and through their influence on the options available for individuals to choose less carbon intensive consumption patterns (for example in the energy supply and transport sectors). Analysis of local authority action on sustainability is normally conducted in terms of policy and the interplay of external forces including vested interests and ideology (eg Bulkeley and Betsill 2005, 2013, Committee on Climate Change, 2012b, Damro and MacKenzie 2008, Fudge et al 2012, Lockwood 2009, Lowndes and Pratchett 2012, Peters et al 2013, Rayner et al 2008) ; and individual, cultural and socio-psychological factors are not usually addressed. On the other hand, analysis of cultural factors and socio-psychological determinants of action is often confined to the study of individuals (Stoll Kleeman et al 2001, Jaeger et al 1993). Exceptions include writers in Cultural Theory (Thompson and colleagues 1998a, 1998b and 1999), which I discuss below. Cultural theory, although it identifies cultural 'solidarities', does not offer an explanation for these or relate them to external and contextual pressures on organizations, nor does it ground the 'solidarities' in sociological or psychosocial theory.

Thus cultural theory does not fill the gap in the literature relating subjective factors to decisions in organizations and exploring the role of both subjective and objective factors in determining organizations' responses to climate change. The present study aims to fill this gap by studying attitudes to climate change in a small but varied sample of local authorities in South West England, and attempting to assess the extent to which these attitudes have influenced decisions relating to climate change and carbon reduction within the authorities studied. It does this partly by relating differences in the response of local authorities to climate change policy to the differences in individual beliefs, worldviews and attitudes and to corporate culture associated with varying geography and political background.

The research questions are therefore:

4. What is the role of subjective factors such as individual attitudes to climate change and corporate culture, in determining carbon reduction policy and action in local authorities?
5. Does climate change denial exist? How can it be explained?
6. How does the influence of subjective factors interact with contextual factors, central government policy, local political realities, and institutional structure?

In order to attempt to gauge the importance of subjective, even psychological factors, it is vital to assess what measures have been undertaken by local authorities towards carbon reduction. No systematic data on emissions trends or carbon reduction activities at district level was identified, although the Committee on Climate Change (2012) makes an assessment of levels and types of commitment by local authorities, and there are research papers using case studies or examples, usually with positive achievements (Fudge et al 2012). This study provides new research which helps to answer this question for authorities in the South West. I discuss generalisability in Chapter 6.

To inform the study design, I bring together in the remainder of this chapter some of the various theoretical approaches to explaining individual attitudes and organizations' collective responses to climate change. These approaches often make no reference to one another and originate in very different disciplines, from political science and economics, to sociology, psychology and social psychology. My research question requires an answer which takes account of the complex interaction of individual subjective attitudes, culture and social mores, institutional and political constraints and technical knowledge of the problem and potential solutions.

The term organization implies that there is some sort of structure and order to the way things are done, and definitions often include the idea that organizations are entities in which individuals co-ordinate their actions to achieve specific goals (Cunliffe 2008), whether they are viewed as rationally designed to meet their goals using hierarchy and rules or using negotiated strategies. Other approaches view organizations as the site of control and domination, the locus of power struggles, conflict and exploitation; or as being shaped by the operation of informal norms and values or the logic of cultural appropriateness (Selznick 1957, March and Olsen 1983); or as the realm of discursive repertoires and contested narratives (Hatch 2013). The term 'myth' is used in

these perspectives to mean unexamined assumptions or narratives which are not anchored in evidence and of worldviews which cannot be so anchored.

Organizational decision-making is therefore much more complicated than in the case of individuals. Local authorities, like other organizations, tend to be complex and frequently multi-functional. Outcomes of organizational processes eg policy measures on carbon reduction, cannot be predicted on the basis of a supersystem of historical or societal patterns (structures) alone; one has to understand the subsystems (departments, units etc), the tensions within them (Hatch 2013), and how conflicts are handled and outcomes negotiated.

In this exploration of the literature, the well-rehearsed discussion between the importance of structure and agency is again encountered. How far can goals determined by leaders be implemented through organizations as envisaged by instrumental perspectives, organizations with their evolved institutional features and social and ideological structures affecting and perhaps determining the outcomes? Here again the study must investigate whether council personnel are primarily the passive agents of organizational priorities, dictated by structures and institutions; or whether key individuals and groups are free agents with a wide area of discretion and control over decisions within the organization. From the latter perspective researchers have made efforts to identify which individuals have a crucial influence on decisions, and this thread of research is drawn on in Chapter 2 in discussion of the methodology of sample selection (Floyd Hunter 1953, Presthus 1964). The important role of structural (institutional) determinants is reflected in the literature in section 1.3, noting that in the absence of effective international organization for constraining greenhouse emissions 'rationality' necessitates failure in such constraints; and in section 1.4 where I discuss specific institutional features of local and national government which inhibit the success of climate change mitigation. In these perspectives the individual councillor or officer is constrained by the inherited structure of the organization with its attendant pressures and incentives, limitations which they are able at best to attenuate.

A distinction can be made between formal organizational or 'material' structures affecting decisions, and the informal norms and rules referred to by New Institutionalists where some of the institutions or structures referred to are in peoples' heads (eg Lowndes 2002), are often evolved over time and may be considered part of the organizational culture. These are often

collectively policed boundaries to conversation and practice, and are discussed under the heading of collective culture below (section 1.5), as are the insights of cultural theory (section 1.8). In this perspective, the role of the individual, while not formally constrained, is nevertheless limited by conventions of thought and speech of which they may be unconscious, (Lukes 1974). This theme is explored further in the literature on cultures of denial.

Ideas about the world as a place like a competitive jungle or as a place where co-operative relationships can be established by laws and values are among those deep structures in society not susceptible of alteration by any individual but which are imperceptibly altered by contemporary myths, stories and political and advertising tropes – in other words by discourse. As Common Cause (Crompton 2010) points out, contradictory ideational structures can be entertained by the same individual and elicited by an appropriate stimulus, skilled messaging, advertising or rhetoric. More commonly stimulated 'frames' grow stronger. In this way structures are affected by political interests and the media.

The balance between these ideational structures, these possibly incompatible perspectives on the world, is an essential determinant for what each individual regards as 'rational' in the face of impending climate change. The presumed self-seeking decisions of agents are thus shaped by these deep and slow-changing structures.

In the view of Giddens (1999) structures enable as well as constrain action. Giddens views structure and agency as interdependent and internally related, so that one can only be studied by holding the other unchanged. This view has been criticized as leading to an unhelpful monism, without allowing the possibility to study the interaction between the two. Hay (2002) and Jessop (1990) have put forward a 'strategic relational' approach, recognizing that action takes place in a pre-existing structural context which is strategically selective, ie favours some strategies over others, or some players over others. Institutions favour some participants over others. Actors are reflexive and can learn better strategies, thus developing their agency. Agents can alter structural circumstances through their strategic learning (for example black markets develop). Unintended consequences may occur, and the confining structure changes.

For Hay, organizational outcomes are thus determined by the interaction of strategic actors and strategic context (the latter interpreted as to a large extent discursive), structure and agency co-determining one another. This view allows the study of the effects of strategic learning, altering action and also partially transforming the context for future action.

In this study the contextual factors are taken to be not only cultural and ideological but also material, and historically 'congealed' in formal organizational details. The difference in agency – the ability to impact on these structures – varies from the almost imperceptible, for lowly council officers and junior councillors, to the much wider scope available to leaders of councils. The impact of central government policy on the rules and incentives which structure action at local level is of much greater, and examined in our study among external contextual factors. The model of co-determination of structure and agency will be reflected in our analysis, which, however attempts much greater detail in identifying the role or constraining influence of structures at each level, both material and non-material; and correspondingly, the differing degree of agency of various players within local authorities. The formal organization of local authorities and roles of individual councillors (known as members) is explored in Chapter 3 below.

In the remainder of this chapter I begin by outlining approaches to organizational behaviour and public policy choices based on the concept of rationality or bounded rationality. These theories, originating in behavioural economics and much used in political science (Laver, 1997,) link political and financial advantages and constraints with policy out-turn. I will consider both the extent to which the premises of the theories are substantiated by research and to whether the theories provide useful predictions. Secondly I follow this by looking at structural and institutional explanations for the development of policy, and compare approaches which emphasize formal institutional structures and those which see a larger role for ideology and 'epistemic position'. Thirdly I turn to psychological and social psychological theories of climate change dismissal and denial, posited as prime explanations for policy outcomes which might not be seen as rational in a collective or global sense. I then explore cultural and social psychological approaches to the issue of policy on climate change. In the final section of this chapter I introduce a taxonomy of influences on local policy on carbon reduction in which the factors identified by the various approaches are brought together.

1.3 Rationality in Economic and Political theory

Rational Actors

Economic theories have long been based on the assumption that individuals act to maximize their economic benefits. In its classical form, this 'utility maximizing' theory describes economic choices *as if* they were made in order to maximize the value of a smooth, twice differentiable, expected utility functions. Within a number of very restrictive assumptions it can be proven that the insight of Adam Smith that the 'hidden hand' of the market is capable of reconciling interests of buyers and sellers through market clearing prices, extends to the proposition that market processes can lead to a welfare maximum. Essential to this conclusion is 'homo economicus', a rational man with encyclopaedic knowledge of all options who makes choices consistently in accord with his preferences without being influenced by others views or needs, or by emotion.

In organizational theory rationality was described by Simon (1957) as a process using the least resources to maximize the achievement of its goals, and his work introduced consideration of the limits on rationality. Later, within the Rational Choice school of thought, as it migrates from the utility maximization of economics to the realm of political science and public choice theory, the term "rational" is generally interpreted and operationalized to mean a consideration of individual gains and losses, often pecuniary, though this meaning is not wholly in accordance with colloquial usage (Dunleavy 1991). Both economists and political theorists have investigated whether decision-makers are "rational" (see for example Laver 1997, Jones et al 2006). Empirical studies of political behavior have found little confirmation for rational choice predictions in terms of pure "self-interest" as narrowly defined. However the maximization of profits hypothesis has proved more useful to predict the behavior of firms if profits are defined in a sufficiently long timescale. It is often difficult to tell the difference between the predictions of profit-maximizing, growth-maximizing, and "satisficing" theories of the firm.

Studies of individuals have arrived fairly consistently at the conclusion that they are not strictly rational, in the sense that decisions are influenced by contingency, emotion, animal spirits, which order alternatives are presented in, and whether the alternatives are gains or losses (Kahneman, 2003; Thaler and Sunstein, 2008). Similarly, those investigating predictors of ecologically oriented consumer and political actions, have found that differences in pro-environmental

behavior can be explained in part through social psychological variables such as attitudes, values and beliefs (Dietz et al 1998, Stern & Dietz 1994, Stern 2000), sense of connection to the natural world (Jaeger 1993) and ecological worldview (Riley Dunlap's New Economic Paradigm, 2008). De Groot and Steg (2008) showed that altruistic and biospheric values helped explain recycling rates. Stern and Dietz (1994) show how values and beliefs are closely related to each other.

> " Individuals who hold strong traditional and egoistic or materialistic values, which environmentalists often claim will need to be sacrificed to preserve the environment, tend to deny that human activities are harmful to nature. It is as if they have rejected information that might suggest the need to compromise their values. Similarly, individuals who value the biosphere for its own sake tend to accept the proposition that human activities threaten natural systems, as if they have selec- tively accepted information that supports what they want to believe, namely that the biosphere needs added protection."P76

They also show how those who value the biosphere tend also to value social justice and the well-being of other humans. These motivations, which on the whole transcend the individual and attribute value to the natural world in itself, are very far from what the foregoing theory would consider 'rational'. Nevertheless, UK climate change related communications have often been designed on the assumption that the most effective appeal to individuals to change their behaviour is the invitation to save on energy bills, for example by turning off appliances, reducing room temperatures, and improving insulation (a good illustration of this is the Act On CO2 campaign undertaken by DEFRA from 2007 onward – see Figure 4).

Figure 4: 'Act on CO2' campaign slogan

Source: http://www.24dash.com/news/housing/2009-03-30-baxi-announced-as-new-partner-of-act-on-co2-campaign#.U2dWtIFdXbc Reproduced with permission of Baxi, partners with Energy Saving Trust in delivery of the Act On CO2 campaign 2009.

These are generally considered to have had limited success, due to the fact that motivation for behaviour change is a good deal more complex, and that they are possibly counter-productive in the wider context (see Whitmarsh et al, 2011; Crompton 2008, 2010).

The importance of emotional content of communication is emphasized by Futerra (2005); DEFRA (2008) explores a social marketing approach, appealing to different 'market segments'. Thaler and Sunstein (2008) identify a number of so called "non-rational" motivations, such as the importance of behaving like others, dependence on reaction of esteemed others, the underestimation of risk, extreme risk aversion in some circumstances and risk tolerance in others, assimilation of new information to known circumstances and existing views, and overconcentration on recent events. They also summarize research showing individuals grossly overestimating risks related to a recent catastrophe or news item, and underestimating risks resulting from personal lifestyles or practices such as smoking or AIDS

As a description of human motivation, therefore, the theory that individuals behave 'rationally' in the sense of maximizing private benefits, fails in many respects. As Jones et al note, 'it is clear that the traditional rational choice assumption of self-interest has failed - that the self-interest axiom cannot explain instances of altruism, ethical restraint, or fairness …[This] has lead an increasing number of theorists to allow maximization for any goal' (2006, p.59)

Bryan Jones and associates argue that the incorporation of additional explanatory variables into the utility function in a rather *ad hoc* way, is questionable in terms of scientific method. Moreover there is little empirical justification in individual psychology ('cognitive architecture') for the assumption that choices are made as if individuals hold known, unique, smooth preference functions over all possible choices, have access to all the relevant information and the computational power to process it (Jones et al 2006). Indeed, rather the opposite since individuals appear much more concerned about losses than gains and choices often depend on the order in which alternatives are considered.

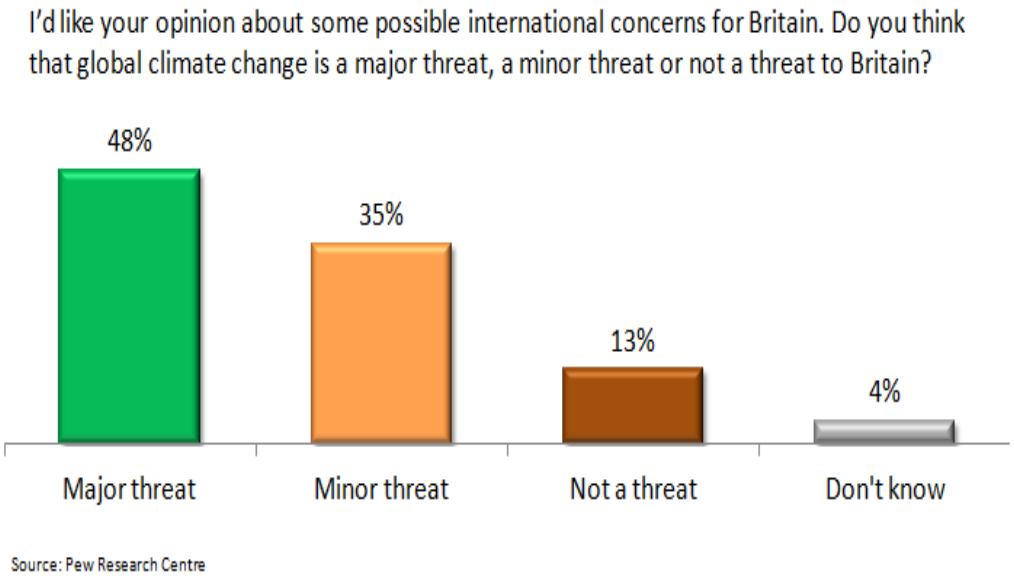
The picture this builds up of human response to climate change is a psychic view of the world largely made up of 'short cuts' in thinking and mnemonics, at times emotional, often altruistic and to a large extent socially determined, slower to change even than the Antarctic ice cap; a view of

the world which may, however, suddenly reach a 'tipping point' precipitated by a catastrophic event or the perception that suddenly 'everyone' is behaving differently, when very large changes become possible in a short period. This change is accounted for solely by the cognitive architecture of individuals and their collective dynamic as a group and requires no further political or sociological understanding to explain the course of events. Humans are, in this view slow to respond to new social risks. Human society even more so, is by its nature sluggish in its reaction to threatening circumstances where the threat appears distant in time and space.

How far do these findings about individual cognitive architecture explain the way that organizations, particularly central and local government, respond to climate change? Lack of adequate policy response to climate change is attributed by Marshall (2009) and Giddens (2009) to the fact that human decisions are not strictly rational but depend on factors such as immediate and tangible danger, visibility, and experience of similar situations in the past; for many people climate change does not seem immediate, tangibly dangerous, visible or the subject of past experiences. In their view political actors cannot afford to suffer the electoral consequences of taking vigorous climate mitigation measures when public opinion as a whole does not prioritize it.

There is some support for this view in studies of public opinion both in the UK and elsewhere, showing that (until recently at least – See Figure 5) majorities of people either do not see evidence of climate change happening, or do not see it inconveniencing them in the near future.

Figure 5: UK opinions on whether climate change is a threat



Source: Pew Research Centre 2013, available in archive http://www.noiseofthecrowd.com/2013/06/ reproduced with permission from Leo Barasi, owner.

Clements study found a sizeable minority in the UK which is climate sceptic, and that this 'is associated with factors such as being male, less well educated, supporting the Conservatives and having right-wing ideological beliefs' (2012, p 183).

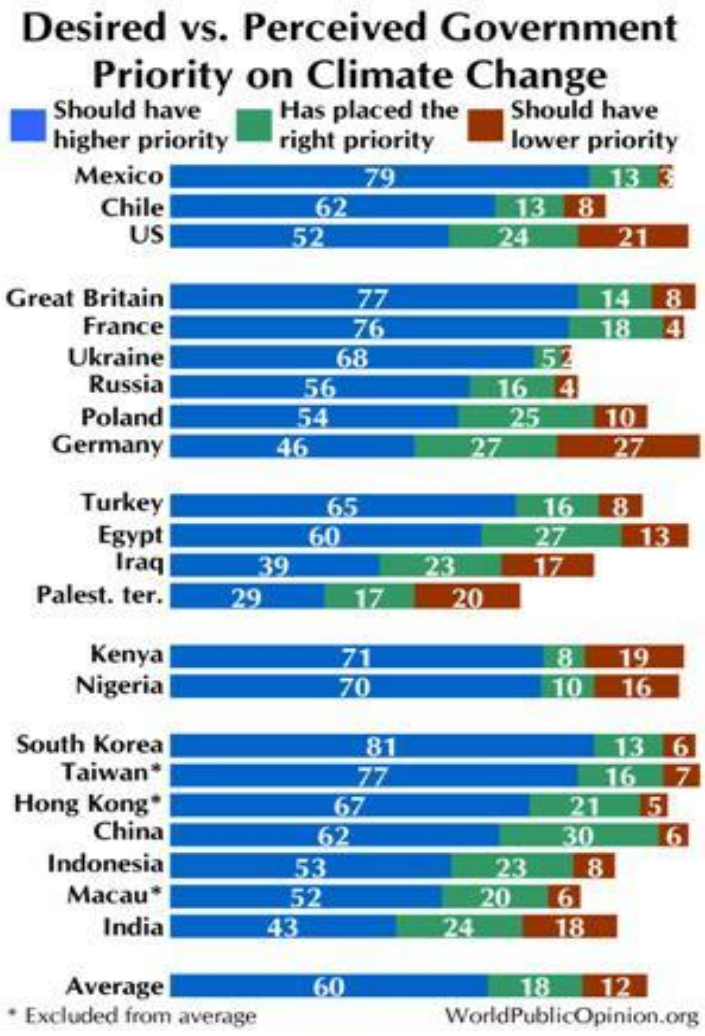
Hume (2009) argues that the response to climate change has been slow, compared with that to, say, the hole in the ozone layer because of uncertainty about the science, and differing views about how science should affect policy. Scientists tend to communicate their studies as if presenting to an academic audience, and this kind of delivery may exaggerate, in the public perception, the degree of uncertainty about the science. Hume also attributes an ambiguous public policy response to legitimate differences of viewpoint and prior belief, not only in regard to the scientific findings about climate change but to the 'stories we tell' about climate change and the varying ideological frameworks within which we view it: what it signifies and whether or not it matters.

One might question the assumption that we have equally valid 'stories' to tell about climate change, with the enormous volume of scientific research substantiating the existence and anthropogenic causes of climate change even by 2007 (IPCC 2007). This

is immaterial however to the question whether uncertainty does explain collective behavior. More saliently, empirical studies, though they reflect uncertainty in a minority of the populations, show majorities believe anthropogenic causation.

In 2012, though the UK public was found the most sceptical in Europe, still 71% of respondents remained concerned about climate change, despite hacked emails, failure at Copenhagen and a very cold winter (Pidgeon, quoted in Adam 2012). Sixty-three percent chose the (misleadingly phrased) statement that climate science had 'proven' climate change over its converse that 'climate change has not been proven by scientists'. One might suspect that quibbles over scientific method might have affected the result, but In the UK more than two-thirds of respondents polled (68%) said they would vote in favour of spending taxpayers money on British projects to tackle climate change (Nick Pidgeon, quoted in Adam, 2012). Also in 2012, an ICM poll showed that 87% believed that the planet was getting warmer (higher than Pidgeon's finding from 2010, an apparent rebound); 57% believed this was mostly due to human action while 30% believed it was mainly due to natural causes. Only 7% believed the planet was not warming (ICM 2012). These findings are reflected elsewhere (See Figure 6): a majority of publics in both industrialized countries and newly industrializing nations believe that climate change is occurring, that it is caused by human activity, and support measures to mitigate it (AXA/IPSOS 2012).

Figure 6: Desired and Perceived Government Priority on Climate Change



Source: http://www.worldpublicopinion.org/pipa/articles/btenvironmentra/631.php using data from Council on Foreign Relations (2009) reproduced with permission of Program for Public Consultation, University of Maryland.

In one study over 80% of those interviewed in both newly industrializing economies and in 'mature' economies thought that governments were not taking sufficient action to deal with risks associated with climate change, and majorities in most countries wished their governments to place a higher priority on climate change (Council on Foreign Relations 2009).

This was also true of US citizens, even though the US has resisted becoming part of any mandatory international emissions control regime and might be expected to have the least sympathetic

public attitudes to policy intervention. Successive studies by Lieserowitz (2007, 2012) show that belief in and concern about climate change has been rising. By 2012 he found that '72% of all Americans think that global warming should be a very high or medium or a priority for the president and the Congress….. It includes 84 percent of Democrats, 68 percent of independents and 52 percent of Republicans.' (Interview, Science Daily 2012). Krosnick's studies (2013) show that even in Republican-voting states, majorities believe that climate change is real and two thirds or more want the US government to cut greenhouse gas emissions.

Clive Hamilton (2010) describes how the response to climate change science, whether sceptic or accepting, is increasingly aligned with political allegiance, as was the case with Einstein's Theory of Relativity and the view that smoking causes cancer. Sceptic views cannot therefore be attributed solely to scientific uncertainty, and rejection of the weight of climate science Hamilton labels firmly as denial. We return to this below.

It is true that the AXA/IPSOD survey shows that in Turkey, Hong Kong, Mexico, Indonesia, Japan and most European countries, the public appear to know more about possible consequences of climate change than in the UK. We may surmise that this is because more of the respondents in newly industrializing countries stated that they had experienced or observed impacts of climate change, whereas in the UK, more than 50% of people did not believe that climate change would affect them. Further, Stern and Dietz (1994) show that values appear to affect what information people will absorb. There is therefore some justification for thinking that limitations on human rationality play a part in limiting efforts to mitigate climate change. However the apparent desire from majority public opinion in many countries for more, and more effective policy in this regard remains unexplained by this perspective.

The viewpoint that typical irrationalities in the way people perceive problems explains paralysis in policy on climate change is thus not wholly vindicated. This view does have a rather simple, even simplistic, view of the way in which individual beliefs and motivations affect organizational and political behaviour. Even democratically elected authorities do not automatically respond to trends in public opinion as a whole. For a more detailed theorization of the processes involved I turn to the 'bounded rationality' approach to explaining organizational decision-making.

Bounded Rationality

The behaviour of basically rational individuals whose choices are shaped by the limitations on thinking and attention, by 'short cuts' and handy comparisons, is sometimes known as 'bounded rationality' in which values are not utility maximized but are subject to 'satisficing' (Simon 1957; Kahneman, 2003). Applied to the policy decisions of organizations, this model is apposite for a situation where agents have to search for information, to define the problem meaningfully from a mass of information and in the light of transient public pressures and political crises, to identify alternative courses of action and to choose among them in circumstances which severely and capriciously limit the time and attention which can be devoted to the issue. Lindblom and Woodhouse (1993) use these difficulties to account for incrementalism in decision making.

The complexity of organizations, and the fact that public sector organizations are often multifunctional, also lead to situations where the most 'rational' course of action cannot be pursued and to where rationality is also 'bounded' by the need for negotiated solutions between a number of internal actors or departments – or indeed external actors crucial to policy implementation (Christensen et al 2007).

Jones and Baumgartner (2005) illustrate how policy attention is shaped in organizations by political and media pressures, and how the responses to electoral and economic pressures in real world institutions are limited by organizations' processing capacity and existing policy and administrative configurations. This is compatible with what Geels and Schott (2007) describe as the stability of "socio-technical regimes". Such an analysis can explain why policy approaches can appear stable for some period of time and then experience lurches into new territory when prompted by a new catastrophe, the rise of an interest group or a period of media focus (a 'punctuated equilibrium' as mentioned by True et al, 1999, and Workman et al, 2009). Bounded rationality and incrementalism are thereby reconciled (Howlett and Migone 2011)

With these, far more realistic, elements, models of organizational decision-making appear to show much greater ability to describe and conceptualize the actual behaviour of organizations (Simon 1999, Jones and Baumgartner 2005). This may have some predictive power concerning the way an organization or local authority responds to a policy dilemma arising from its environment. How

far the theory is able to predict the outcome, its policy behaviour, is another matter. The model allows for an almost infinite array of factors to come into play to affect the outcome of the information processing mechanism, and the formation of coalitions which permit action. Vested interests are clearly part of the institutional arrangements which 'bound' rationality in these descriptions, but the main emphasis for Jones and Baumgartner is on information processing, a diverse framework in which individuals and organisations 'arrive at judgements, make choices, deal with information, and solve problems' (Bobrow & Dryzek, as cited in Parsons 1995, p. 35).

Such a perspective may explain why national governments have such a hard time making policy on climate change mitigation, where scientific information is dense and contested, vested interest groups are powerful, ubiquitous and vocal, and possible policy responses (such as cap and trade schemes or pricing adjustments) require institutional innovation in greater or lesser degree. It would also suggest that policy actors are driven chiefly by short term interests, and conform to central government pressures and electoral considerations much more than long term goals. They follow bursts of media interest in an issue. In regard to climate change mitigation, it could be argued that, lacking such stimuli, or faced with media presentation of climate science as inconclusive (Boykoff and Boykoff 2004), elected authorities judge the potential loss of votes greater than any gain following from decisive action. Efforts are directed more to 'flagship' green projects which give the impression that the problem is being tackled, than to systematic emissions saving.

Although all these features of policy making on climate change are in fact observed, many environmental issues are complex in causation and involve a large number of interests, policy networks and geographically-based public groups; many such issues present a challenge to policy-makers in processing relevant information, and yet many have been dealt with successfully. These include problems of pollution and water-sharing within river basins, and damage to the ozone layer dealt with through the Montreal Protocol. The science of climate change has certainly been the subject of controversy, but it does not appear that the processing of scientific information (except possibly in the USA) has handicapped the making of policy. We must ask, therefore, if there is something special about climate change which makes it so much more difficult of resolution – what is sometimes referred to as a 'wicked problem'.

Rational choice theory

In recent years theoretical application of the principle of rationality has re-emerged in a new guise, which makes no claims to theorise the 'black box' of human personality or to explain the psychology of decision making. But with an economical assumption that individuals and corporate bodies will act in their material interests (normally interpreted as economic), rational choice theory yields some interesting and testable predictions about the choices individuals and organizations make. As Andrew Hindmoor notes for example, rational choice theorists 'assume that people can be relied upon to act in ways which best secure their goals and that these goals reflect their self-interest' (2010, p, 42). A particularly interesting vein is the literature about collective choice dilemmas and the insights which game theory offers on likely outcomes (Laver 1997).

This approach does show that there are many important "rational" reasons for failing to act pro-environmentally, such as the free rider situation, and the way in which failure of collective organization de-incentivises sound environmental behaviour. As Anthony Giddens comments on this point, 'we have no politics of climate change….We do not have a developed analysis of the political innovations that have to be made if our aspirations towards limiting global climate change are to be made real' (2009, p.4)

Others, (McCright and Dunlap 2003, Leggett 1999, Jordan and O'Riordan 1997) concurring that the policy response is slow, have argued that this is related to the incentive structure facing political and business actors: the fact that effective government action would threaten both individual lifestyles and vested interests, incurring material losses compared with a business as usual scenario, at least in the short term. Certainly the costs to vested interests and to individual lifestyles of effective policy would be far greater than those of dealing with atmospheric ozone; yet the gains, or the avoided costs of climate change, would be correspondingly great (Stern, 2006).

Environmental issues are typically and quintessentially matters of collective choice, costs and benefits rarely susceptible of capture through market processes. Laver (1997) shows that through game theory and other tools it is possible to predict the kind of problems decision-makers are

likely to face and the outcomes likely to emerge from the resulting perverse incentives. An early contribution to this line of thought was Garret Hardin's influential 'The Tragedy of the Commons' (1968). In this, he envisages a scenario where those using common land all have an interest in seeing that it does not get overgrazed and continues to give sustenance to their stock. However, without appropriate organization, each individual is unable to ensure this outcome, and therefore has an incentive to graze as many animals on the common as they can, to maximize their share of the resource. The outcome is worse for everyone as the capacity of the land falls. Dieter Helm (2012) compares this collective choice dilemma directly to the structure of incentives facing international climate change negotiations; the rewards to free riders are great, and he argues that this is why no nation has been willing to trust the compliance of others and to take binding emissions caps upon themselves.

On the other hand, Elinor Östrom has shown that traditional communities in many parts of the world have evolved systems of co-responsibility and effective management to conserve natural 'common pool' resources, challenging the universality of Hardin's conclusion (Östrom et al, 1999). Östrom's work is supported by fieldwork, illustrating that collective choices are mediated both by culture and by particular institutions, and that individualist scenarios with tragic outcomes are more culture- and institution-specific than had been thought. The key variable is the availability of governance institutions in which negotiated solutions to the dilemmas can be worked out and outcomes policed whether formally or informally. It is these arrangements which are to a large extent lacking in relation to climate change.

1.4 Structural and institutional factors

The institutional framework within which political actors and groups make choices is therefore a necessary complement to rational choice explanations of inaction on climate change. This framework may also provide the setting for other or indeed alternative types of explanation such as cultures of denial within organizations; so the recognition of institutional obstacles to action does not commit us either to accepting or rejecting explanations based on some kind of rationality.

Difficulties in implementation

Just as climate change has been described as a 'wicked' policy problem, which has no universally accepted formulation or agreed approach to policy, so, Mike Hulme asserts (2009, p. 337) such problems may be capable only of 'clumsy' solutions, with a variety of overlapping and potentially even contradictory policies being implemented at various levels and by various agencies.

There is a large literature on policy implementation (see for example Hill & Hupe 2002) which may be relevant to the 'messiness' of policy and practice in relation to climate change. It might be argued that part of the issue is not a failure of central government to make policy appropriate to its goals and circumstances, but a failure to implement this policy, or to recognize, with Barratt and Fudge (1981), that policy-making is, in effect, also a function of the response to central initiatives by local agents, those who are undertaking action on the ground. As Lipsky argues, in taking issue with the 'top-down' approach, 'the decisions of street-level bureaucrats, the routines they establish, and the devices they invent to cope with uncertainties and work pressures, effectively become the public policies they carry out' (Lipsky 1980, p.xii). In making a more manageable task for themselves, survival mechanisms may be brought into play which modify the original policy objectives and intended processes. In this context the 'garbage can' model of organizations is also relevant, viewing organizations as collections of programmes and solutions looking for problems to solve, the measures conventional to the organization conditioning both problem definitions and outcomes more than overt allegiance to central policies might suggest (Cohen et al 1972).
I will later in this thesis examine whether there is evidence in interview data of intended policy outcomes being shaped by executive groups making matters more manageable for themselves.

Structural inadequacies in environmental governance

At the same time there have been powerful critiques of national UK climate change policy which suggest that more than difficulties in implementation are involved. In their study of the UK response to climate change Irene Lorenzoni and colleagues attribute the 'Hot Air and Cold Feet' to 'structural inadequacies in the UK's political system of environmental governance' (Lorenzoni et al 2008). They speak of the structural factors in the UK system of cabinet government, arguing that in the years of the Labour government until 2006 there was no coherent political co-ordination. While much was made of the UK's international leadership in climate change, they record a 'severe mismatch between political good intentions and reality' (p. 105). The Cabinet Committee on Economy and Environment

remained in the Treasury, strongly influenced by business interests. Environmental policy belonged in DEFRA, the Department for Environment, Food and Rural Affairs, a relatively weak department. Energy and Innovation were placed in the Department of Trade and Industry. Transport was again in a separate department. Despite New Labour rhetoric about 'joined-up governance', disjointed governance made it easier for strong lobbying by industry representatives to achieve watered down or inconsistent policies. Tensions thus remained between the Climate Change Act (2008) and Energy and Transport policies. The creation of the Department for Energy and Climate Change (DECC) in 2008 and the allocation of responsibilities for emissions reduction by departments in the DECC report 'Climate Change: Taking Action' (2010) was clearly an effort to achieve better co-ordination. However the Treasury still retained a heavy influence on domestic climate change policy and an approach which diverged somewhat from that of DEFRA on the one hand, and embodied a different ranking of goals from DECC on the other.

This broadly institutional explanation does find some support in some of the interview data discussed in Chapter 4, which indicates that tensions between different departments and lack of 'joined up' implementation also affects local government. However, these tensions, at both national and local level, cannot entirely be attributed to structural inadequacies in the system of governance. It became clearer under the Coalition government that contradictory tendencies between departments and within the same department have their roots in political and ideological differences, with the election of several prominent climate sceptics to key positions in relevant Parliamentary committees (for example Peter Lilley on the Energy and Climate Change Committee), and ministerial posts (John Hayes, declared opponent of windfarms, as Energy Minister), and the growing prominence of a faction within the Conservative Party which aimed to sweep away 'green' subsidies, legislation and regulations.

Contrary to the 'structural inadequacies' hypothesis, some councils have been able to achieve a level of political commitment which has enabled a much more proactive and systematic approach to decarbonization. Woking Borough Council, for example, with the initiative and energy of the Chief Executive and Leader and cross-party commitment to a Climate Change Strategy, was able to reduce its own carbon footprint by 70 per cent. In the same way it is arguable that structural divisions and competitive pressures within national cabinet could also be overcome with sufficient political commitment. Indeed in the years 2009 and 2010 steps were taken within the Labour government to

improve co-ordination around climate change policy, in a way which looks positively hegemonic compared with the level of later divisions between a Liberal Democrat Energy and Climate Change Minister (Davey) committed to carbon reduction and a Conservative Chancellor (Osborne) viewing such measures as inhibiting to the competitiveness of the UK economy.

New Institutionalism

Rational choice theorists have recognized that institutions shape the context in which actors make their choices and that therefore these two theoretical perspectives are not incompatible (Lowndes 2010 p. 64). On the other hand, 'institutions' can also be taken to mean 'standard operating procedures' (Peter Hall 1986) or 'stable, valued and recurring patterns of behaviour' (Huntington 1968). Indeed, stable and unremarked patterns of behaviour, such as which persons might be included in a decision, what parameters are accepted without question, and what factors might be mentioned in argument have been noted among those referred to here as 'organizational culture'. Identifying their influence is more typical of the 'normative' institutionalism (Lowndes 2010 p. 64 & 73), and in this perspective the 'boundedness' of rationality in decision-making is more interesting than the logic of rational choice.

The 'new institutionalist' approach is concerned with 'the informal conventions of political life as well as with formal constitutions and organizational structures' (Lowndes 2010, p. 61; see also Peters 2005, March & Olsen 1989). This approach is exemplified by some of the studies quoted above (Rayner 2008, Lowndes and Pratchett 2012), attributing changes to formal structures of governance but also paying close attention to informal institutions, procedures, and policy frameworks. Bulkeley and Betsill point out (2005, 2013) that local environmental policy is the outcome of multi-level governance involving both the competencies at each level of formal government institutions and overlapping horizontal institutions including local coalitions and pressure groups and other agencies, 'institutions' within this wider definition.

1.5 Cultural theory, Ideology and "Epistemic position"

In contrast to the structural and institutional theories introduced above, I now examine some explanations of policy dispositions in terms of subjective predispositions, ideas and ideology prevailing in our institutions as well as among individuals.

The website of the Social Brain Centre justifies its research programme thus:

> The rational individual construct was not based on naivete, but on the belief that this was the best model to help us plan our economies and organise our societies. However, a variety of social, political and environmental challenges, culminating in the current economic crisis, makes this model seem increasingly unhelpful. Above all, it fails to grasp that social context is not an afterthought, a variable to be controlled, but the defining feature of how we think, learn and behave.
>
> The emerging early 21st century view of human nature is richer and more complex. We are
>
> - Constituted by evolutionary biology
> - Embedded in complex social networks
> - Largely habitual creatures
> - Highly sensitive to social and cultural norms
> - More rationalising than rational.
>
> This emerging conception of human nature is radically different from the prevailing implicit view, but in public and private life many continue to act as if we had not learned anything useful about our brains, behaviour and biases in recent years. We therefore need to shed light on our typically implicit and often erroneous theories of human nature (Social Brain Centre 2013)

Thus there are many ways in which culture can affect whether people are altruistic or not, how, or whether, they perceive their dependence on each other and upon the natural world, and which 'others' they value, among neighbours or strangers, among species, ecologies, rivers, mountains and landscapes. John Muir initiated a change in culture which transformed the view of the Yosemite valley from that of a prime logging opportunity into one which saw it as a priceless landscape heritage (National Park Service 2014). The retelling of the Chipko story formed the mythical underpinning of a movement to protect forests in India. For our purposes, pressures to cultural and social conformity may also pose problems for climate-preserving action. An extreme example of the power of such pressures is the obedience of seamen when the revered 19th century Admiral Tryon gave orders to set the ship on an inevitable collision course with another vessel. None of his subordinates had the courage to insist to the old man that the consequences of this action would be disastrous. The ship sank and 357 officers and men were drowned (Regan 1993). One might also refer

to the problems of 'group think' apparent in the low risk ratings given to securitized debts traded on financial markets prior to the financial crisis of 2008, the neglect of warnings and sacking of whistleblowers and 'doom-mongers'.

Cultural theory, as advanced by Michael Thompson, Steve Rayner and associates, interprets different policy positions in terms of five (and only five!) different forms of "cultural bias". These five different "solidarities" – individualist, hierarchist, egalitarian, fatalist and hermit - battle within, and may dominate, individuals, organizations and nation states. Cultural theory has something to say about how goals are formed:

> 'our convictions about how the world is (and people are) are shaped by the various ways in which we find ourselves caught up in social life' (Thompson et al 1999 p 212)

Is this an oblique reference to the ways in which our geographical situation, social class, networks, identity, and material interests affect one's worldview and political outlook? It seems not.

> '….On our own, we do not know what we want; we discover our preferences by establishing our social relations' (Thompson et al 1999, p212).

This point is well made; but little is said about why particular individuals or organizations come to be dominated by a particular solidarity. Rather, it is shown that these five perspectives, or solidarities "map onto" different assumptions about the natural world, which are salient to action on environmental problems (Thompson et al 1998b). There is no analysis of how individuals come to hold these views, or why. While it may be true that the slowness to act on climate change is related to the proportion of those with individualist and fatalist attitudes in the population or within government institutions, this hardly counts as an explanation without reference to political, and possibly historical, circumstances which make it so, and to eschew mention of the doctrines of neo-liberalism when discussing cultural obstacles would seem cavalier. These doctrines both posit and encourage individualist behavior, in a pattern which is referred to as rationality (Marwell and Ames, 1981; Marglin 2008).

Exploring attitudes to environmental ethics, Thompson notes that most surveys show that human-caused environmental change generally results from actions which are regarded as not "right". There is a moral dimension to acting in the interests of the environment (Thompson and Rayner 1998a). In a study of determinants of environmental action in relation to climate change, Jaeger finds that cultural rules and social networks are important and finds that more women than men, and more older than younger Swiss were disposed to positive environmental action (Jaeger et al 1993). The latter relationship occurs because older citizens were more attached to each other and to their rural surroundings, whereas younger people were more nomadic and urban.

Fundamental to both moral viewpoints on the environment and to the attachments found by Jaeger are connectedness, to the environment itself and to each other. One of the prime reasons given in studies for individuals not to take action on climate change, is lack of trust in the commitment of others. Prevailing social norms and morals are one way in which human society responds to collective choice issues such as this, where in the absence of norms, a tragedy of the commons situation would occur. One may also speculate how it comes about that a society such as the USA, whose roots are largely in dislocated social groups, comes to be dominated more by Thompson and Rayner's "individualist solidarity" than European nations.

The dimension of connectedness and trust (in other people) therefore seems to be a crucial determinant of the likelihood of action to promote sustainability. In this way, cultural theory comes very close to the perspective expressed in rational choice theory in terms of game strategies and their dependence on the degree of communication and trust with other players (Lever 1997).

When examining the culture or organizations it can make sense to identify an organization as dominated by hierarchist, individualist or egalitarian solidarities, although these classifications are quintessentially applied to individuals. It would be incorrect to use the term 'hierarchist' to refer to the types of measures preferred by particular authorities or organizations; these measures should perhaps be called 'hierarchical', to distinguish them from the holding of hierarchist values. Pro-regulators, for example, come from egalitarian as well as bureaucratic inspiration (as in UK food rationing during World War II), NGO's and greens often favour regulation and 'bureaucratic' measures as well as governments. Proponents of markets are not always individualist, and may favour strong corporate identities and policy positions advocating government intervention, of the

right type. Although their *rhetoric* may remain individualist, rather few have argued that in the 2008 credit crunch, governments should have left the banks to fail. Thus it cannot be argued that the types of measures adopted necessarily correspond to cultural value 'solidarities'.

A more precise, though limited description of organizational culture might be gleaned from looking at the kinds of statements which individuals use, and seeking to analyse these in terms of repertoires, or 'tools' which serve to mitigate unwanted emotions, as described by Norgaard (2006). I look at this in more detail in the discussion of cultures of denial below. However, statements which are typical or repeated, or arguments emanating from more than one individual and characterizing groups within an organization (such as a political party group), can be examined in terms of the way they position the speaker in relation to the issues posed by climate change. Some of these repertoires illustrate cultural preferences and biases which affect policy areas.

A fuller description of organizational culture could be obtained through organizational observation and the tools of organizational analysis, methods which could have great benefits in enlarging understanding of institutional culture and constraints on discourse and policy-making. Such methods were felt to be beyond the scope of this study, but would facilitate a greater depth of understanding of forces at work and phenomena such as splitting, projection and the unconscious in organizations relevant to our topic. I address these issues briefly when discussing the literature on the psychology of climate change, but their identification in organizations has been limited in this study.

I turn now to a discussion framed more in terms of ideology and epistemic positions. Lorenzoni and colleagues, in addition to describing the institutional obstacles to effective policy outlined above, also argue that the UK government's approach to mitigation has been centrally influenced by an 'allegiance to ecological modernization and reliance on market mechanisms that focus on producing incremental change in business emissions' (2008, p. 105). The ecological modernization perspective includes taking a technical approach to issues, and preferring to deal with large businesses and providers (as in windfarm developers – a policy which arguably has backfired, insofar as community windfarms would likely have attracted less opposition than those proposed by large and often foreign companies). In accordance with prevailing economic orthodoxies the approach has also included a commitment to market solutions and a voluntary approach to private sector carbon reduction rather than resorting to legislation and regulation.

It may be a corollary of the allegiance to ecological modernization that demand management, both in transport and energy behaviour, has taken a back seat. Strategy for decarbonizing the energy sector in DECC, Chatterton (2010) relates has tended to be dominated by a concentration on the supply side with a very technocratic feel , and Rayner (2008) describes a similar slant in relation to transport. Intervention to influence consumer demand for power has been 'light touch' or absent. Carbon taxes were rejected, the fuel duty escalator shelved. Instead in the early 2000's, the emphasis has been on communication aimed at persuading households to make small changes and urging the financial benefits of so doing.

Rayner, in his analysis of why transport emissions continued to grow between 1990 and 2006, also blames piecemeal policy making, a lack of targets and of a concerted effort to deliver them. Instead the approach was to predict and provide for increasing demand. The reluctance of local and national authorities to restrain demand was related to the conflicting policy goal to pursue economic growth for which increased trade and transport was considered essential (note the implied undermining of the notion of 'green' growth), and it was feared that more active restraint would damage competitiveness. The European reliance on a voluntary approach to reducing vehicle emissions failed by 2007, the neglect of regulation and road pricing measures again attributed to powerful international lobbies. Even the pursuit of efficiency savings took no account of the 'rebound' effect – that in more fuel efficient vehicles, people might choose to travel further. Powerful discourses associating individual freedom and mobility with car use also made strong demand management electorally risky, especially after the fuel duty protests of September 2000 (Rayner 2008).

In DECC, however, Chatterton (2011) describes growing sophistication in public communications attempting to influence household energy behaviour. From seeking merely to provide information to the public, exhorting them to energy-saving actions, there developed a view that the beliefs about climate change might matter less than other determinants of behaviour, an increased interest in social marketing approaches, and more recently in developing incentives and framing as a 'nudge' to more environmentally sustainable behaviour patterns, an approach grounded in rationality, however bounded.

The ecological modernization approach in practice has minimized or avoided conflict involved in promoting emissions reductions. It is not that emissions trading mechanisms were bound to fail, since cap-and-trade systems where emissions permits are auctioned has the potential to achieve the reductions needed. But the use of market mechanisms has been vitiated, just as, perhaps, attempts to regulate would have been, by accommodation to vested interests. Within the European Union Emissions Trading Scheme, emissions permits were initially distributed to existing heavy users, with the promise that over time increasing proportions would be auctioned. However this has not happened, indeed permits have been issued in excessive quantities (particularly during the recession). The carbon price therefore collapsed and is too low to provide an incentive for many carbon-saving investments (Helm 2012). An EU proposal to postpone a further issue of permits was narrowly defeated in the European Parliament, again following heavy industry lobbying.

One has to question here whether the epistemic position, or rather, the ideological commitment to a market-based approach with minimal state intervention, is a root cause, or whether its prevalence is largely a manifestation of corporate power and influence. Well-funded think tanks over the last quarter century and international currents of opinion have encouraged politicians in allegiance to market mechanisms and helped to embed hostility to regulation and the public sector. To adopt such a position also helps to avoid conflict with corporate players with disproportionate influence on party funding and in the media. This could be described in Bachrach and Baratz' terms as the second face of power (1962).

Further, even if the epistemic position were different, we might ask, would this have promoted a more effective climate change policy? A Keynesian approach, more typical of the immediate postwar period in the UK would perhaps incorporate a more sanguine view of regulation or national enterprise to achieve a greening of the economy. But its commitment to the growth of material benefits and GDP would have left untouched the conflict between the reduction of emissions and economic prosperity, identified as it was with the growth in private transport and material goods. Perhaps the 'Spirit of '45' would have lessened the trade-off, by improving public transport and adopting a more planned approach to the energy sector. But this is indeed an academic exercise, the point of which is to illustrate that the failure to adopt a coherent and effective climate change policy cannot be blamed entirely on the trends in policy often described as neoliberalism. Economic theory since the classical economists neglects what Daly (1999) calls, the Great Economy in which our

monetary economy is embedded, the natural environment. Thus the goals of economic policy for at least the last two centuries are implicated in the neglect of environmental consequences except as the special case 'externalities'. 'The laws of economics have been seen as more immutable than the laws of physics' (Chatterton 2010, quote taken from video).

It is perhaps the related view that economic growth should and can continue indefinitely which underpins the Treasury's insistence on high discount rates in project appraisal which has prevailed throughout a period of the lowest interest rates in living memory and which has discouraged long term investment in the public sector. It also embodies, even if it is not caused by, a view which discounts the importance and value of future wealth and future beings compared to the present. It poses an obstacle to investment for substantial decarbonization in the medium to long term. The use of a high discount rate in public sector project appraisal may owe something to the departmental differences and fragmented policies noted above, but it is hard to deny that a short termist approach tends to pervade the political agenda.

1.6 The structural position of business: a materialist view

It is therefore worth considering the positive proposition that vested interests are more appropriately regarded as key influences on climate change policy than the epistemic positions which are adopted in response to their pressure. To support this argument, one might note that there is much greater diversity among economists than among those who are chosen to advise governments. It is at least arguable that, just as people choose their rationalizations more freely than their habits, governments choose their epistemic positions more freely than they choose the groups and interests which keep them in power. 'Epistemic choice' would perhaps be a better term for a policy framework which involves minimal intervention in markets.

The interplay of interests in determining public policy has been theorized in different ways, much of the literature drawing on research in local and city government in the US. While elite theorists such as Floyd Hunter (1953) took it for granted that decision-makers would be a group limited in size and connected to the institutional and economic levers of power, pluralists such as Dahl and colleagues (Dahl, 1961) argued that their New Haven studies identified a range of interest groups influencing policy through pressure, bargaining, negotiation and compromise, enabled by competition of political

actors and against a background of underlying consensus. Dahl and Lindblom (1953) point to different groupings influencing policy decisions in different sectors.

The critique of pluralist views mounted by Bachrach and Baratz (1962) argues that power is exercised not only through influence on particular decisions but through issue framing, the formation and protection of decision processes. These efforts ensure that some alternatives never enter the agenda, and never become the subject of political conflict; they argue further that such exercise of power will not be revealed by a study of actual decisions. Parallel to emerging interest in the 'new institutionalism', identifying not only formal structures but also informal structures, conventions and operating procedures (Hall 1986), these processes constitute the 'second face of power', and explain how the wants and interests of some groups gain more ready access to the political system than others, which latter may be revealed in 'sub-political' ways. Examples of this approach include analysis of how political discourse on climate change has framed the issue in ways favourable to 'non-decisions'(McCright and Dunlap 2003).

Lindblom's work (1979, Lindblom and Woodhouse 1993) makes some moves towards a structuralist position in describing 'urban regimes', acknowledging that business has a privileged position in relation to public decision making both locally and nationally, not only because of the pressure businesses can bring to bear but because of their crucial role in generating economic growth, a key goal of national and local government. This view is supported by Elkin (1987), also writing in the US, who highlights the failure of popular control of city government due to its dependence upon business interests. In his view the system is skewed against the emergence of policy on broader social issues. In contemporary UK some of the work investigating local authority policy on sustainability and carbon reduction (discussed in Chapter 3) might provide an illustration of the way in which concern for economic growth affects and even determines policy on other fronts. The present research project will investigate whether this perspective on local authority action is valid in the authorities studied, despite UK government climate change policy in the late 2000's.

The importance of civic society and values (the 'civic virtues') has been emphasized by Putnam (1993, 1995). For example the differences in urban planning between Munich (responsive) and Birmingham (planners were able to ignore criticism from civil society in building the inner ring road) were attributed to pervasive social values. Putnam uses the concept of social capital, a combination of

values, cultural resources and networks, and socially acceptable norms – 'informal institutions' . This view has received much criticism for the assumption that 'social capital' is unambiguously positive for both economic development and democracy, and for ignoring institutional and historical shaping of norms and networks, the structural determinants of power, especially in post-colonial societies, (Putzel 1997, Koelble 2003). Koelble, writing in South Africa, points to the kind of 'social capital' which, while it may be advantageous for the capitalist development of particular groups, may be unhelpful to democracy.

Nevertheless the recognition of informal institutions and the importance of the subjective is crucial to understanding which issues become the subject of political controversy, as I explore further in the sections on cultural and psychological approaches. Stephen Lukes (1974) builds on the work of Bachrach and Baratz in arguing that a focus on issues and potential issues neglects the possibility that peoples' wants and world views may be the product of a system which works against their real interests (a possibility envisaged by Lindblom 1977). The 'third face of power' prevents even a critique of the status quo or the articulation of alternatives. For Lukes, this explains why, for example, local pollution might never become a political issue (Crenson 1971), and there is some analogy here with the work of Norgaard (2011) who deal with why climate change is frequently absent from public discourse. Issues or policies may be suppressed in ways which need not be consciously chosen by any individual but which reflect socially structured behaviour of groups and practices of institutions, a possibility I return to in the following section.

To summarize, this materialist view differs from the outlook which sees structural inadequacies in decision-making on climate change policy as the result of historical accident or systematic difficulties in implementation which affect all central political initiatives. In this view the major constraints on climate change policy are the influence of corporate and business interests on both policy and its implementation. Jeremy Leggett's personal histories (1999, 2014), evidence the influence of vested interests on policy choices between carbon taxes, targets and limits, and emissions trading systems in the development of the Kyoto protocol and in the kinds of provisions and incentives applied to fossil fuel, nuclear and renewable energy suppliers in the recent past. He compares the kid-glove treatment of nuclear bidders with that given to solar energy producers.

Lowndes and Pratchett (2012) suggest that the government's own material interest in deficit reduction, forms a major part of the rationale for reducing the monitoring requirements and incentives for carbon reduction which prevailed in the 2006-09 period, as well as an ideological commitment to local autonomy and reducing red tape. However one might still seek an explanation in terms of vested interests as to why deficit reduction fell so heavily on public sector spending.

A partial explanation for slow and patchy policy response to climate change can thus be substantiated in terms of vested interests for central government policy (and for the EU), but in this study of local government, it will be important to establish whether, in their much more constrained policy choices, external corporate or vested interests affect their activity on carbon reduction, as well as overt public pressure. Rational choice in this context is likely to entail responsiveness to these manifest pressures. The policy implications of this perspective are very different from the foregoing explanations; the onus of change with this structuralist perspective would be upon the national political scene, and the factors outlined in the foregoing section – structural deficiencies, epistemic position, fragmented approaches to policy, the discount rate and difficulties in implementation would be influenced all together primarily by changes in this milieu.

1.7 Psychological Explanations: Anxiety and denial

A quite contrasting perspective has been introduced to the debate in the growing number of studies of the psychology of responses to climate change, drawing on findings on human cognitive architecture mentioned above, but also upon psycho-analytic and socio-psychological theory. Marshall (2009) describes the situation as one of climate change denial, a view supported in studies of individual responses to the issue by Stoll -Kleeman, O'Riordan and Jaeger (2001) and Norgaard (2006). They refer, not to a failure to acknowledge the existence of climate change, but to recognize and follow the implications by taking effective action, whether at collective or individual levels. This, it is posited, is due to a state of denial, of 'knowing and not knowing' at the same time, a mental avoidance and failure to explore those avenues which might be open to individual or to collective action.

The prototype descriptions of denial come from Elisabeth Kübler Ross (1970) in relation to serious and potentially terminal illness, and Stanley Cohen (2000) in relation to atrocities and suffering. In

both these situations, acknowledgement and response would be expected, in the first case because the issue could hardly be more serious from an individual point of view, and in the second it can be presumed that there is at least a prima facie moral imperative for a humanitarian response.

But with climate change, we may be on less safe territory to presume that some response is warranted; the moral case for personal action is less clear and personal psychological engagement cannot be presumed. People do not on the whole take action to prevent earthquakes and for many, climate change may appear to be in the same category of events over which they are powerless, even if they believe that it is caused by human activity. People, and political actors, do not devote attention to issues upon which they think they have no influence. If so, then it is action on climate change rather than inaction which requires explanation, perhaps in terms of the presence of preconditions of awareness, concern and agency; and 'climate dismissal', as some now call it, avoiding pejorative overtones is the norm (see Rapley 2013).

Investigation of the 'bystander phenomenon' shows that people are less likely to intervene to help a person in need when there are many witnesses and responsibility is widely shared. In this view it is the diffusion of responsibility and the degree to which the needy person is perceived as 'like' the observer (as well as other social and cultural variables), which determines whether there will be a helping response (Lunn 2011).

In focus groups in Zurich, Stoll Kleemann and associates (2001) looked at what they describe as psychological devices by which people justify their behaviour and remove the emotional dissonances they can experience when looking at changing preferred lifestyles. They found the following responses advanced to defend against any sense of responsibility for action:

Metaphor of displaced commitment	*I protect the environment in other ways*
Condemn the accuser	*You have no right to challenge me*
Denial of responsibility	*I am not the main cause of this problem*
Rejection of blame	*I have done nothing wrong*
Ignorance	*I didn't know*
Powerlessness	*I can't make any difference*
Fabricated constraints	*There are too many impediments*

After the flood	*Society is corrupt*
Comfort	*It is too difficult for me to change my behaviour*

We might criticize this research for assuming that claims about powerlessness, impediments and difficulties are always in fact psychological devices. While similar obstacles to greener lifestyles have been found in other research (for example Rowson 2013), it would be a heroic assumption that unavailability of public transport, recycling facilities, funds for solid wall insulation etc are never real and practical barriers to sustainable practices.

The investigation of explanations related to agency, or lack of power is problematic. If people declare that they are powerless, is this a mask for self-interested reluctance to use what little power they have? Or is the denial and avoidance of thinking about climate change documented in the literature, in fact a mask for the pain of knowing they can do nothing to alter it? Using the techniques of psychosocial analysis outlined in the following chapter, I make some attempt to distinguish from the interview data not only the extent to which respondents indicate that they are powerless, but the role that this explanation plays in their motivation and attitude to carbon reduction.

In a very clear contribution to the debate, Norgaard in her 2011 book writes about a situation where one might expect climate change to be the subject of both conversation and political action, in a town where the main source of income was dependent on the degree of snow cover. She documents in 'People Want to Protect Themselves a Little Bit' (2006) the way that conversations about action on climate change do not happen and are inhibited by customs of discourse. She describes the ways people distance themselves from responsibility, and attributes this to avoidance of socially unacceptable and personally painful feelings of guilt and threat to personal and national self-image as good; these feelings could result from awareness of the contribution which their lifestyles make to the problem of climate change. In Stanley Cohen's typology, this is 'implicatory denial' (2001). In this view the issue of climate change triggers psychological defensive reactions, as do atrocities and suffering.

If so, such defensive reactions are normal, and generally involuntary processes for dealing with prospective and actual losses. They are seen in the tendency to underestimate risks of personal mortality resulting from behaviours such as smoking (Thaler and Sunstein, 2008), and to

accommodate to losses through initial strategies of denial (Kubler-Ross 1970). Are there useful analogies between the way in which an individual faces (or does not face) material and psychological losses, death or life-threatening disease, and the way society faces climate change? Marshall (2014) argues that there are, and he refers to Kahneman's distinction between the two sorts of mental processes – the calculating (and slower) process on the one hand and the instinctive or emotional on the other – to explain how people may accept climate science with the calculating 'part' but hold it at a distance emotionally. Thus, we are able, in Cohen's words, to know and not to know at the same time. The prospect that our basic living environment is changing, potentially to a more hostile one, can lead to existential anxiety, feelings of sadness and loss, and may restimulate survival anxiety from early infancy (Weintrobe 2012). It has been found that even those active in relation to climate change may discover through attention to their dreams, repressed emotions of helplessness, guilt, and dread of losing members of their family through natural disaster (Gillespie 2013).

Weintrobe (2013 ch. 3) identifies anxiety as playing a central role. Randall also identifies anxiety, denial, splitting and projection, of the sort familiar to psychotherapists, in individuals' responses to climate change, responses which if temporary are a normal way of adjusting to change and loss, but which run the danger of becoming permanent if the loss cannot be assimilated (2005, 2009).

Weintrobe proceeds to distinguish accordingly between less and more pernicious varieties of denial. Apart from denialism, an organized cultural and political phenomenon, she identifies *negation* - an initial and complete rejection that something is so, literal denial in Cohen's sense – and *disavowal*, a partial recognition but one which denies the significance, magnitude and painfulness of a circumstance or issue. The latter she describes as 'artful': reality can be 'seen and not seen at the same time' (parallel to Cohen's description). Whereas negation is characteristic of the immediate response to loss or shock – 'It's not true', 'I can't believe it!' – it is also typically the first in a series of stages which allow us to move gradually towards acceptance of loss, often through numbness, anger, bargaining, and depression, not necessarily in that order. Negation appears more serious, but, argues Weintrobe, by denying the truth altogether, it does not distort it in the way that disavowal typically does (2013).

Disavowal (following Freud's 1917 nomenclature) on the other hand, involves acknowledging facts but minimizing their importance; or failing to recognize implications for emotion, morality or action.

It includes both Cohen's 'interpretive' and 'implicatory' denial. In some sense, Weintrobe argues, it involves personality splitting between a part that 'knows' and a part that 'does not know'. By this she does not imply the creation of a classic split personality, but a process whereby a person might disown part of themselves, a knowledge or feeling; for example the expression of anger may be discouraged in the child, and it then becomes unconscious in the adult and 'messes things up'. Knowledge of another person may be similarly split, for example the loving parent can be idealized while the destructive or hurtful part is seen as a separate being, perhaps projected upon another person (a figure of authority perhaps) who is then seen as a persecutor. Vulnerability, feelings of anxiety, guilt and other socially unvalued emotions can also thus be denied, and may be attributed to (projected upon) others who can then be rejected and reviled.

The process of disavowal ensures that reality can be seen and not seen at the same time. In this way anxiety can apparently be avoided. The anxiety is banished to the unconscious, where it cannot be mitigated by rational argument. Efforts to force acknowledgement of the denied reality result in increasing anxiety and in the defensive structure becoming more entrenched (Weintrobe 2013 chapter 3).

Weintrobe identifies two types of anxiety: the anxiety of the narcissistic self that it will not survive the facing of reality, and the anxiety of the reality-loving self that the narcissistic role has caused damage which might lead to abandonment or retribution. The disavowal may become an enduring mental state, a 'psychic retreat' from reality, where both anxieties can be systematically avoided. She quotes Bion (1958) and Rosenfeld (1971), in linking this to a sense of inflated self worth, the delusion of being special – being, as it were, a master of the universe. Rosenfeld describes this as destructive narcissism, to distinguish it from the narcissism of the baby which is mourned and gradually given up with an acceptance of reality. Weintrobe herself (2004, 2010) traces how this arrogant attitude tends to a sense of entitlement to exploit others with the justification of being superior, and to being immune to emotional difficulties. Such an attitude, she argues, is fertile ground for the appeals of consumerism, appeals which serve to entrench the attitude of entitlement still further.

Disavowal in this sense is a process which, in removing the 'sting' of reality, blocks sadness and mourning, preventing any meaningful action, change or reparation of damage. Freud (1917)

describes this state of arrested mourning as melancholia. The result is a way of being which will look for and seize upon any 'quick fix' to a problem, a painless path 'obliterating any sense that facing reality entails facing any loss'. (Nothing could be a better description of the tenor of UK government advertisements in the mid-2000s aimed at producing behaviour change in households.)

Weintrobe writes:
Disavowal is also artful. It can cleverly bend, reverse and warp the truth, and fraudulent thinking flourishes in this state of mind…..Disavowal can result in confusion and an inability to think with a sense of proportion….When a problem is minimized and ridiculed, the sane part of the mind – which is always there, even if eclipsed and made small – becomes increasingly anxious. The more disavowal is allowed to proceed unchecked by reality, the more anxiety it breeds and the greater the danger that the anxiety will be defended against by further defensive arrogance and further disavowal (2013, p.39).

Hulme (2009), Futerra (2006) and Lieserowitz (2007) argue that defences are accentuated by the very "catastrophising" which environmentalists and others hope will gain attention for the issue. This is corroboration of the importance of anxiety, but what is facing reality and what is catastrophizing? This is a subjective judgement. Evidence from Howell's study of responses to 'The Age of Stupid', a hard-hitting film about climate change impacts 40 years on, is ambiguous on this point. The viewers reported higher concern and fear immediately after the film, and greater motivation to take action or change their behavior, but these effects were not sustained after 6 weeks had elapsed. A minority (11 per cent) agreed that ''I feel less convinced that there is any point in trying to reduce my carbon emissions'' (Howell 2011).

Rowson gives the handy name 'stealth denial' to the phenomenon where 'about two thirds of the population intellectually accept the reality of anthropogenic climate change, but 'deny' some or all of the commensurate feelings, responsibility and agency that are necessary to deal with it … This 'stealth denial may be what perpetuates the doublethink of trying to minimise carbon emissions while maximising fossil fuel production' (2013, p. 3).

This concept aligns with the Freudian one of disavowal, but is defined operationally as anyone who believes that climate change is largely anthropogenic, but who answers 'yes' to any of the following three questions:

'*I don't feel uneasy about climate change'* Emotional Denial (47.2 %)
'My daily actions are not part of the climate change problem' Personal Denial (27.6 %)
'There is nothing I can do personally that will have any significant effect on limiting climate change.' Practical Denial (65 %) (Rowson 2013 p7)

Percentages in brackets refer to the (overlapping) proportions of the national sample of 2024 adults. The answers to the third question seem to depend heavily on how the respondent interprets 'significant'. If they take it as meaning 'large', one could answer this question in the affirmative and still take every opportunity for personal emissions saving. However while I would question whether assent to the third question is necessarily denial, the survey results do illustrate a capacity to reduce anxiety by ignoring or dismissing the problem of climate change at least some of the time. In this study I use the more neutral term 'dismissal' recommended by Rapley (2013) to refer to behavior which in practice takes no account of climate change, so as to avoid making assumptions about what individuals are conscious of and their reasons for not engaging in practical response.

Rowson also illustrates that conversations are not taking place about climate change, identifying a situation in which denial of climate change is embedded in culture, whatever individual participants in interactions may think or believe.

1.8 Cultures of denial

When examining the mechanisms of psychological denial in individuals, it is important not to use the concepts in a facile way to explain the 'gap' between individual beliefs and behaviour. Much of our behaviour is socially determined, and the social and cultural dimensions of climate dismissal or denial must also be examined. As Hoggett (2013a) cautions, the danger of a psychologising analysis is that it can collude unwittingly with policy makers and others who may be tempted to locate the problem in the individual rather than in the culture in which the individual is situated.

Stanley Cohen (2000) and Norgaard (2006, 2011) point out that defences such as denial can exist at a social level, and are manifest in social norms and conventions about what can and cannot be said or even thought about. Even when some individuals are not in personal psychological denial, the subject at issue can become one which is swathed in silence. As George Marshall notes, when mentioning climate change casually in a conversation 'the result is almost always the same: the words collapse, sink and die in mid-air and the conversation suddenly changes course….It is like an invisible force field that you only discover when you barge right into it' (as cited in Corner 2013). Rowson confirms that

> Only 60 per cent of the sample have ever spoken about climate change, and of those, 71 per cent do so for less than ten minutes; 43 per cent for less than 5 minutes. This last point is particularly interesting, because of what we know about conversations being cut short when they become uncomfortable, and because it highlights that there is no meaningful national conversation about climate change (Rowson, 2013, p. 8).

It has also been observed that the mechanisms such as splitting and projection which are identified by Randall have their correlates within organizations and societies (Weintraub 2013). Denial at the level of a national political process may involve the politicization of attitudes to climate change described by Hamilton (2010).

I am reminded of how, when working in South Africa during the 1970's, strangers encountered while travelling would often ask something like 'What do you think of our country?', would raise the issue of apartheid themselves, and without much ado, launch into a vehement defence of the institutions of separate development. There were certain well-rehearsed arguments. When presenting research on the success of black farmers in the late 19th and early 20th centuries, I was told the anecdote of the agricultural officer, who, having helped a black farmer to double his yields, came back the following year to find him at leisure, having done half the work. This was clearly meant to stimulate indignation and to distinguish white industry, from black 'laziness', though Douglas Adams' dolphins would look at the substitution of leisure for work rather as a sign of intelligence. The tale was delivered as if it were received from a personal acquaintance, though I must have heard the story at least three times, in effect, a shared defensive repertoire.

When, in the 1980's, white people began to see images of the hardships and dangers of life in the townships on their TV screens and depictions of the reality of migrant labour, some were shocked. 'We didn't know'. The mechanisms of separation and control of information which preserved this ignorance absorbed enormous effort and expense, and apparently for some, great anxiety which led them to harangue foreign visitors. Insiders who opposed the system, such as Beyers Naudee, were subjected to a vitriol not expended upon white English-speaking and foreign critics, because Afrikaaner intellectuals such as he were expected to support the defensive narratives. Boundaries to the social consensus of the group are policed.

Although in Britain in the early 1980s, the issue of nuclear weapons was highly contested, and disagreement was often aggressive and overt, in ordinary conversations I sensed much of the same reluctance to address the issue, a tendency to keep at a distance the implications of the doctrines of 'fighting' a nuclear war (as opposed to mutually assured destruction) and of 'first strike' weaponry arriving in Europe. Reasons given for not addressing the issue also sometimes had a slightly abstract and disconnected feel to them. 'Humanity doesn't deserve to survive', 'Earth will be better off without humans', were given as reasons not to worry, or, in one case, 'I don't really care because I expect to be raptured up to be with Christ in heaven' (I paraphrase, but not much).

The whole discussion about the effects of nuclear missiles seemed understandably to generate so much anxiety that it was itself experienced by many people as traumatic. At the time educationalists wrote of the damage to young people's personal security and hope for the future, and anxieties were recorded in primary school children. Paradoxically, the black humour with which community groups debunked *Protect and Survive,* the official advice for coping with a nuclear attack (Home Office, 1980) was an effective 'reality testing' strategy to puncture an apparent disavowal of the scale of destruction which a nuclear strike would wreak. But in retrospect, perhaps the emotionally demanding experience of engaging with the nuclear threat in the 80's contributed to the reluctance, almost, the weariness, to contemplate another end-of-the-world-type scenario in relation to climate change in the1990s and early years of the 21st century. Perhaps, like one of the villains in the film The Matrix, many of us would in fact prefer to be slotted back into a world of illusion, provided it is well-endowed with consumer luxuries; or at least, do so choose for part of the time.

So, it is meaningful to talk of cultures of denial; and never more so than in the years between 2004 and 2007 when the great boom in world financial markets, brewing since the deregulations of the 1980s, reached its height. The invention of complex financial instruments and innovations which allowed High Speed Trading led to a degree of risk of market failure which was unprecedented. Whistleblowers who called time on risky and dishonest practices were being ostracized and sacked.

Regarding this period, Stein writes of a 'culture of mania', where the series of ruptures in western capitalist economies, 'caused considerable anxiety among these leaders, but rather than heeding the lessons, they responded by manic, omnipotent and triumphant attempts to prove the superiority of their economies' (Stein, 2011, p. 184).

It is worth noting that in this culture of denial, many knew that the good times would end and yet acted as if not knowing it. (A cartoon depicted stock traders examining documents in a business setting. 'What's our exposure?' one asks. All three individuals are naked). Others who anticipated a crash, acted accordingly and even hoped for it, so that greater profits could thereby be made, but did not disturb the collective trance (Rastani 2011). The scene is analogous to a game of musical chairs, where the first to realize that the music has stopped are safe. But as far as the regulators and the builders of economic models were officially concerned, the system *was* perfectly safe. They were protected from, or protected themselves from knowledge of the system's vulnerabilities. Although individuals knew the music would end, the culture as a whole did not know it, and banks, investment analysts and august economic advisers were among those caught out.

Hoggett (2013a) also refers to this period and draws the analogy with climate change. He uses Long's notion of a perverse organization, committed to pursuit of pleasure at the expense of others, reality simultaneously accepted and denied, the adoption of a world of virtual reality and virtual wealth, involving the collusion of others. The description aligns with the concept of sexual perversion as one which has an obstinate and artful quality to it in defiance of truth, and the tendency to justifications such as the claim that the subjects benefit from the perverse activity, which is abstracted from social relations. So those activities which result in greenhouse emissions are somehow disconnected from the consequences in the lives of others, especially the distant and poor.

Norgaard (2011) draws on Zerubavel (2006) to illustrate how denial is socially organized and manifested in culture. Attitudes are influenced by norms about what feelings and attitudes can be displayed in various social settings, and there are repertoires of responses which defend against those emotions whose display is socially undesirable, such as guilt , anxiety, and (Sandra White adds, 2011) shame, a much less tractable type of affect than guilt. Norgaard shows, further, how these repertoires, these 'tools of innocence' are mustered to defend against negative national identities in specific political circumstances, and 'tools of order' to defend against anxiety that things are out of control and unpredictable. Is it likely that these could be used by personnel in local authorities to avoid responsibilities for climate mitigation activities even though these are officially espoused goals? The study has been designed to investigate whether this is so.

1.9 Summary and synthesis

So far I have described a range of possible influences upon local policy on climate change, from the rational decisions of political agents (bounded by human cognition and political pressures), through the shaping effect of central government policy and incentives, organizational structures and procedures, local political factors and the pressures or constraints imposed by public authorities' dependence on the business sector to make desirable things happen. So far all these explanations are compatible. One might still ask, which of the external pressures or institutional structures are the most important. This question is capable of a qualitative answer.

Against this may be set explanations which, while rational from the individual's point of view, may not be rational from the point of view of the organization and its goals. These explanations include not only the effect of agents' private agendas, personal survival strategies and career promotion strategies. It also includes subjective factors such as the world views and ideologies found among decision-makers, and cultures within organizations . With the discussion of cultures of denial, drawing on psycho-social theories of individual bystanding, disavowal and denial, I introduce a contrasting perspective that much of the observed policy process is to be explained by unconscious motivation shaped by social and cultural forces beyond the scope of material interests, though not necessarily unaffected by them.

In the literature reviewed in this chapter none of the studies which deal with policy decisions on climate change mitigation in public bodies consider the role of psycho-social variables alongside the political, bureaucratic and ideological influences more usually investigated. This is a gap in the

literature. The current study aims to explore both types of influences in such a way that their respective roles can be identified for the authorities in the study. It does this by

a) Investigating action undertaken on carbon reduction and seeking to relate it to factors in common between authorities, in particular the context of central government policy, regulations and financial incentives, common institutional structures, and conflicting attitudes to and narratives about climate change around decisions in local authorities. This includes studying whether climate denial exists in the study authorities, and how this can be explained (Question 2).
b) and by comparing authorities which differ in their actions in response to climate change policy and relating this to differences in objective conditions and in subjective factors such as world views, social norms and organizational culture. (Questions 1 and 3).

In Chapter 6 I derive theoretical conclusions from the findings, and ask how the theoretical perspectives I have drawn on can usefully be integrated.

Synthesizing research on individual environmentally relevant behavior, Stern lists four sets of determinants:

1. Attitudes - Values, Beliefs and Norms approaches
2. Contextual factors – cost, public policy, practical factors, persuasion, social norms, advertising, technology, building design, pr ices, price of oil, interest rate etc
3. Personal capabilities – knowledge, skill, social and economic resources.
4. Habit or routine, or, for organizations, standard operating procedures.

He observes that these factors interact, and that 'Often the nature of the interaction can be well described in terms of barriers or limiting conditions to behavior change' (2000 p419).

Looking at a similar (though not identical) range of influences on environmental innovation in organizations, Reason et al (2009) document constraints and enabling factors for both businesses and local authorities. Their conclusions make use of Ken Wilbur's classification of factors shown in figure 7 (Wilber 2000), which has some similarities to the above, and usefully distinguishes between objective and subjective influences.

Figure 7: Ken Wilber's Four Quadrant Structure

1. Individual subjective factors (values, worldview, ideology, feelings, defences)	2. Individual objective factors (socio-demographics, knowledge, technical skills etc)
3. Collective subjective factors (culture, shared norms etc)	4. Collective objective factors (political, economic, technical etc)

Source: Reason et al (2009); *Insider Voices: Human Dimensions of Low Carbon Technology,* Lowcarbonworks, University of Bath p.106. Adapted from Ken Wilber (2000) *Integral Psychology*. Boston: Shambhala. Reproduced with permission of Peter Reason.

In the present study, the factors in each quadrant might be those listed in Figure 8

Figure 8: Influences on Local authorities' response to Climate Change mitigation policy

1.Individual subjective factors (values, beliefs about climate change, party allegiance, worldview, affect, defences)	2**. Individual objective factors** (age, knowledge about climate science, awareness about policy alternatives, technical skills etc)
3. **Collective subjective factors** (culture within authority, shared norms and epistemic positions; fragmentation, informal institutions, lack of communication or varying norms between departments)	4. **Collective objective factors** (central government regulation, statutory obligations, financial limits and incentives, political 'steer', economic climate; local public pressure and vested interests)

For the present study this diagram affords a useful taxonomy of influences upon action, and I use it in discussion of the findings in Chapter 6. The taxonomy suggests that local authorities do act to reduce carbon emissions of their organization and geographic area when

1. The issue is seen as urgent in relation to other issues. Actors are able to consider information about climate change and are personally able to contemplate the implications of action and non-

action in the light of their values; to give psychological space to the issue and to respond practically (Quadrant 1)

2. Technical information and expertise is adequate to identify alternative actions and policies to achieve greenhouse emissions reduction (Quadrant 2)

3. Corporate culture is favourable to relevant policy and carbon reduction activities; and commitment is achieved across departmental boundaries (Quadrant 3)

4. Carbon reduction is seen as being in the interests of the organization (whether because of central government diktat, incentives, or public opinion or some combination of these); and action is seen as effective. (Quadrant 4, but mediated by factors in Quadrant 1)

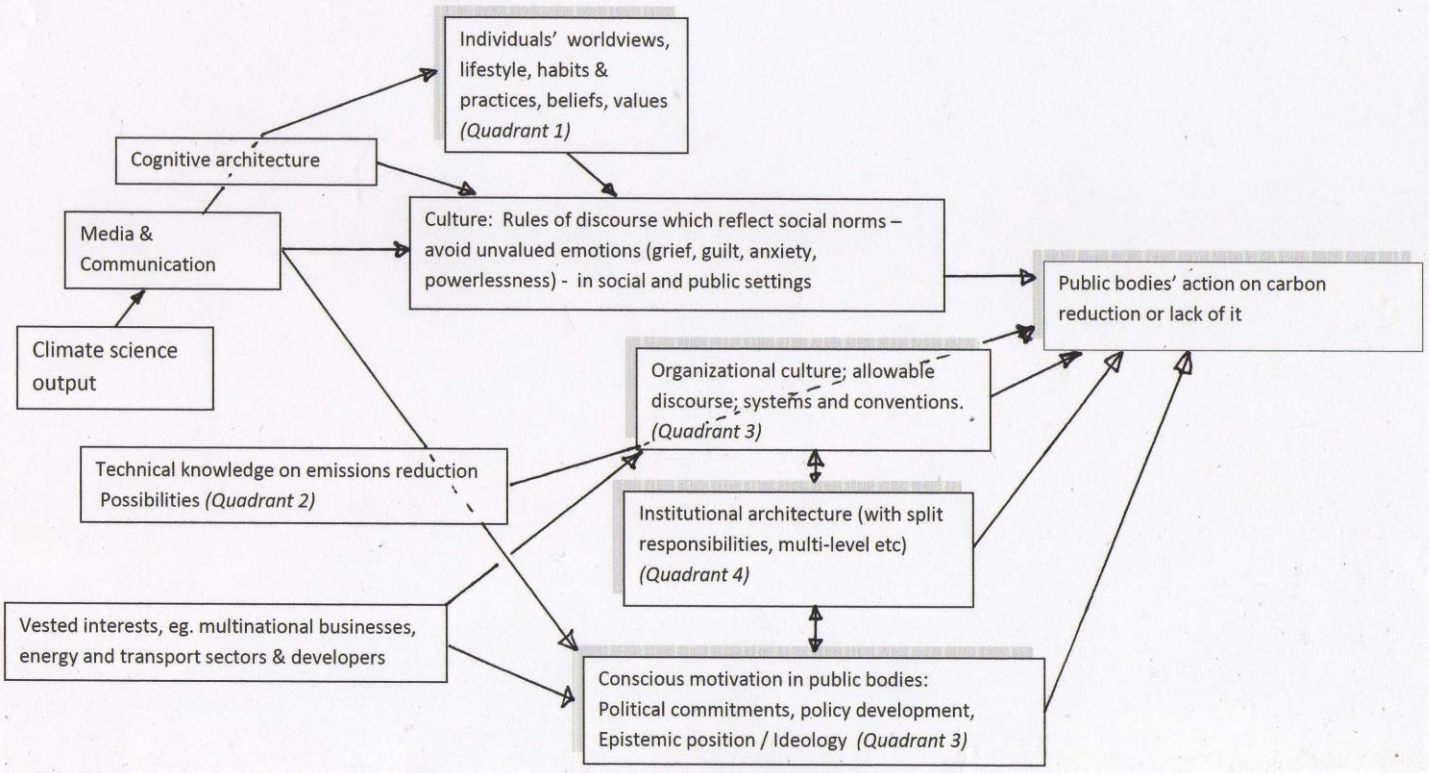
In this study I focus particularly on whether a significant part is played by subjective factors, quadrants 1 and 3, when, in an area of local government cuts and changes to the planning system, the actions of central government (collective objective, quadrant 4) appear so overwhelming. Subjective factors include values and beliefs, perceptual frameworks and world views, emotions and perceptions of agency, as well as collective factors such as corporate culture and organizational norms. They include the way that humans deal psychologically with actual or prospective risks and losses. These subjective factors may be found in opinions about climate change, the science, and the framing of the issue, the meanings of information about climate change and the implications which respondents may identify concerning local impacts and business prospects, the extent to which the issue is incorporated into discourses within the organization as well as personal emotional responses to the issue.

It is possible that for some individuals climate change may remain a background issue, but nevertheless social and regulatory pressures compel action. It is also possible that individuals may believe there is a need for particular actions which external or organizational pressures preclude. Peter Reason and associates suggest that unless positive factors are found in all four quadrants a proactive approach to sustainability is unlikely (Reason et al, 2009); that the factors in the quadrants cannot be summed, they are more in the nature of conditions which are necessary, but not sufficient. If unfavourable, they are like vetoes. If correct for our sample, this view implies that subjective factors can either inhibit or permit, but not engender an organizational pro-environmental response where other conditions are unpropitious. The results of the study, the methodological approach to which is set out in the next chapter, do not completely confirm this view; showing that collective

cultures can inhibit action which is nevertheless compelled by external, contextual factors; and that the individual subjective can impact on collective subjective attitudes. The 'veto' hypothesis is also explored in the discussion of how far individual and collective subjective attitudes influence the outcomes for whole authorities in Chapter 5.

A diagrammatic representation of influences on policy-making is given in Figure 9 summarizing relevant variables and possible channels of influence on authorities' actions which have been discussed in this chapter. In the following chapter I discuss how the project was designed to gain information on these variables and their roles.

Figure 9 : Influences on Climate Change Policy



Chapter 2. Research Design and Methodology

2.1 Approach to research design

In this chapter I explain the limited nature of quantitative data to assess achievements in carbon reduction. I explain the choice of a qualitative study to obtain information on the subjective factors in policy determination which are the focus of the study and the use of psycho-social methods. I relate measures taken to avoid harm to respondents and to ensure an ethical approach. The construction of the study design and interview schedule is then described, together with the sampling methods and choice of case studies. The methods of data analysis include the identification and analysis of themes, opportunities for feedback from respondents and the application of psycho-social methods. The chapter concludes with a reflection on the limitations of the research method in time, generalizability and the fact that the research covers a period of rapid change. In a note to this chapter I offer selected extracts from I-poems as a method for examining respondents' positioning of self and others and their subjectivity.

The first research question is to identify the role of subjective factors such as individual attitudes and corporate culture, in determining carbon reduction policy and action in local authorities.

Any study of the response to policy on carbon reduction must begin with an assessment of what changes in practices, technology and emissions of greenhouse gases have in fact taken place. This information was hard to gather as there is no national source of such information about local government or by local authority area, and it had to be sought from councils themselves. Some of the factual information could be gathered from documentary evidence available through websites, and policy information from the websites themselves and the information presented to the public by the various authorities in the study; but although commitments to sustainability and carbon reduction, and sometimes some flagship projects were visible on websites, the main indicators involved, greenhouse gas emissions over a number of years were not generally accessible in this way.

In addition to this 'hard' information, the study attempts to distinguish the major influences on authorities' achievements in climate change mitigation. I have focused particularly on how subjective factors impact on policy and implementation, given the influence of particular contextual factors,

technologies and regulatory conditions. In order to obtain information on corporate culture and individual attitudes, as well as some of the factual information not accessible from website, the study was designed using semi-structured interviews carried out with councillors and officers. For reasons of accessibility the study area was restricted to South West of England, and individuals in seven different authorities were interviewed.

A qualitative research study was chosen for three reasons

1. To seek to identify how interconnected causal influences work within the realm of councils' decision-making. (It was discovered during the study that even obtaining the factual data was not straightforward and might require material from a number of sources. Large scale quantitative data, if it could be collected on the relevant variables, would be difficult to interpret.)
2. To research individual and corporate attitudes, it was felt that face-to-face contact and the establishment of some degree of trust and safety was required. It was hoped to investigate the possibility that attitudes to climate change are related to anxiety and to beliefs which might elicit other unvalued affective responses. Since emotions are involved, adequate rapport was needed and this takes time. I did not feel able to acquire the quality of information needed from postal, telephone or online surveys, and so chose to do a limited number of in depth interviews in person.
3. The use of psycho-social methods benefits from a narrative approach to interviewing. While a number of structured questions were used to elicit particular bits of information, as the interviews continued it was possible to move more towards following particular lines of narrative, which would have been impossible in a larger study.

The interviews were recorded so that it was possible to retrieve not only the information provided in them, but narratives, stories and interactions which would lend themselves to techniques of psychosocial analysis. This, it was hoped, would give insights into the identities, attitudes and relationships being described.

2.2 Issues in research design

2.2.1 Explaining variation

Data on the outcomes of central policy on carbon reduction were collected for seven authorities. One part of this study was designed to find common features across authorities in their response to central policies, focusing on the overall achievement or lack of it in carbon reduction. It also seeks to identify the problems and conflicting priorities these policies present to local authorities. In addition, like J.S. Mill (1843; 1961) I seek to explain differences, the variation between authorities with similar, if not identical, structures, subject to the same stimuli. This method is most comparable to the 'most similar systems' design described by Przeworski and Teune (1970), where comparison is made of units (often countries) which differ only in respect of the variables whose relationship to each other are being studied. Of course such a 'natural experiment' is rare to find, and there are likely to be a number of differences between the cases. This design suffers correspondingly from the drawbacks which Pzeworski and Teune identify, namely that as there will almost certainly be a variety of differences between the cases , enough to 'overdetermine' the dependent variable (in this case action on carbon reduction), it becomes difficult to determine which differences are the most important ones.

In this study the local authorities do have many similarities: they are situated in the same region, South West England; their members undergo the same processes of election, their deployment of councillors in an executive of portfolio holders and in scrutiny committees has limited variation; officers occupy the same spectrum of roles in relation to members. The authorities' responsibilities are all governed the same legislation and they are all subject to the same funding mechanisms, the same regulatory and policy environment.

However they differ in geography and size; the more rural units in the study are more sparsely populated, have smaller budgets, and to a varying degree more Conservative-voting electorates. These differences are inter-related. In this case it has been impossible to take a sufficient number of cases (authorities) to find the right combination of similarities and differences to identify rigorously which factors are the most important.

Instead the emphasis has been to assemble detailed accounts of processes and outcomes from interviews in the different authorities which provide information from participants' point of view on the relative importance of various external contextual constraints (both political and economic) on the one hand, and organizational culture and conflict on the other, across a variety of authorities. These views are less 'objective' but the interviews do illustrate *how* the related differences in geography and local political pressures affect policy outcomes.

In Ragin's terms (1987,1989) this is a case-oriented approach, and as such is liable to bias towards the historical specificity and complexity of cases considered as wholes, contrasting with the variable-oriented approach which tends to identify broad structural variables in causative relationships. Ragin recommends the use of synthetic strategies of research, employing both statistical analysis of large numbers of cases (variable-oriented) and case studies embodying the comparative logic of experimental design; ie case studies which can be compared to illuminate the theoretical relationships explored in the statistical analysis and which do justice to the particularity and complexity of cases considered as wholes. One of these synthetic methods involves the use of Boolean algebra to combine the advantages of case studies with some of the benefits of quantitative analysis.

The subject matter of this study could, in theory, be approached using a synthetic method, by statistical analysis of an outcome measure – eg. carbon reduction by authority – against some of the causative factors mentioned or proxies for them. One might include political party domination, proportion of population in rural areas, size of authority, spending per head, and – an almost dichotomous variable – presence or absence of large windfarm proposals. However data are not available for such analysis for two reasons. The underlying research question concerns attitudes, on which there is insufficient data. The literature review shows that party allegiance is an inadequate proxy for this, and information on environmental attitudes and behavior is not available by local authority. Further, outcomes in terms of carbon reduction are measured in different ways over time with differing adjustments to factor out the effects of spending cuts, as discussed in Chapter 4; so there is no consistent data set. Although there are 39 individual interviews in the study the number of authorities is only 7, too small to take advantage of Boolean methods. The dichotomous nature of Boolean algebra makes it unsuitable for an analysis of individual attitudes, entailing, as it would, the

loss of a great deal of data; although some classification of views about climate change has been attempted in Chapter 5.

The interview data was also used to answer the second research question on whether a degree of climate change denial exists, and the way in which this affects policy outcomes. This data could not be accessed otherwise than by qualitative interview data, which in this study is then subjected to psycho-social analysis. By its nature, what is ignored or denied cannot be discovered by statements taken at face value or by comparison of single statements across individuals or authorities. Context and overall narratives are important to analyse the meanings within and behind statements made by respondents. In order to do this each individual narrative forms a 'case'.

2.2.2 Assessing corporate and contextual 'objective' influences

A particular issue has been how to assess the factors in the 'objective' quadrants in the Wilbur/Reason diagram, and factors such as organizational culture, independently of the informants giving their subjective views through interviews. For the individual, subjective factors will in fact include the reflection of all the other factors within the person's perceptions and view of their organization and the world, as well as values and opinions of a more general kind. So to operationalize the model in practice would require that one can assess the objective factors and corporate norms and incentives independently of one's informants in the organization, providing triangulation with data on technical possibilities, real external constraints and incentives, such as regulations, electoral considerations, and organizational culture.

This has been attempted in the current research, though it is acknowledged that it can be done only very imperfectly. The twists and turns of central government policy and the surrounding economic environment can be tracked by other means and are described in the following chapter. Alternative policies for carbon reduction can be derived from literature on how particular councils have dealt with the issue, including some path-breaking initiatives such as those of Woking (which has its own renewable energy supply company), Merton (planning guidelines insisting on on-site renewable generation) and Keighley (universal offer of free loft and cavity-wall insulation). However the researcher's knowledge of technical possibilities for low carbon operation and investment is limited and has depended on comparisons between different councils in the study; and corporate culture is understood chiefly through the responses of individual interviewees.

2.2.3 Psycho-social methods

The approach to data collection and analysis have also been enriched by the methods of psychosocial research developed by Hollway and Jefferson (2000), Clarke and Hoggett (2009) and others. This approach accepts much that constructivist theorists have to say about the social construction of 'normality', that is to say, reality, and therefore the importance of attending carefully to the discourses presented by research respondents to identify the meanings being constructed (following the seminal work of Berger and Luckman 1966. See also the discussion in Parsons 2010 about the exclusivity or otherwise of different strands of constructivist thought.) It does also however recognize a degree of realism, in presuming that not all aspects of reality can be shaped by these processes although they may be interpreted differently. This can be illustrated most dramatically in the varying interpretations of the implications of the science of climate change; interpretations differ, but few would disagree that there is a science, and that geographical observations, eg of temperatures and ice extent, can clinch arguments about trends in physical geography.

Analytically informed psychological perspectives on research interview data reflect the perception that, while one can learn much from what individuals say about themselves and their attitudes, this cannot be taken as the full story. Respondents present a persona conditioned by social acceptability, psychological comfort, the desire to be and to be seen to be 'good' (Norgaard 2006, White 2010). Also coming into play are psychological defences, which arise as a normal response which protects the psyche from threatening information, and from unwanted or socially unacceptable emotions such as fear, anxiety and even anger. Such defences are noted by Cohen (2001) in the presence of atrocities and suffering and Randall (2009) in statements people make about climate change and potential solutions to the dilemmas it poses. Thus, there is a need not only to analyse discourse but to get beyond what a respondent says about themselves and the issues rather than taking, for example, reasons for inaction at face value.

Hollway and Jefferson (2000) found that a study of the accounts people give of their life, actions and beliefs can be approached with the tools of psychotherapy and psychoanalysis and can be understood in ways which go beyond the literal meaning of their verbal responses; that respondents (like researchers) are defended subjects, whose stories are capable of revealing more than they may

intend. Research in the emerging field of psycho-social studies seeks to generate data in a way which allows respondents freedom to tell stories in their own way, creating a narrative which can be analysed in the same way as sequences of free associations. The analysis will include attention to symbolic content, the 'affect' of the researcher as well as the respondent, and the connections and meanings implied by the respondent. In addition, by eliciting images and nonverbal material, by using their own reflexivity, even their dreams, researchers can gain a deeper understanding of the sense the respondent is making of the world.

I have sought to adapt this psycho-analytically informed method to what could be seen in effect as an elite study. To do so was difficult in that, whereas psychosocial researchers often make use of the Free Association Narrative Interview, involving life histories, typically carried out in two visits in a home environment, in this study securing commitment to interviews from as wide a range of informants as possible has been preferred to insisting on two interviews. The interviews were between 45 minutes and 2 hours long, often took place in council offices though almost invariably in a private space; others were conducted in bars or cafes which afforded a convenient and more neutral setting for the interview. The space for emotional depth in the conversations was therefore more limited than might have been the case in respondents' homes. The psycho-social approach has not therefore been fully exploited. However, respondents were encouraged to tell stories, give examples, and follow lines of thought, and as the interviews continued they tended to move into a more narrative mode, whether they were in a private space at work or in an outside more neutral setting. This telling of stories, and sometimes the dialogue with the interviewer, offered a purchase for psycho-social methods, and it seemed that the surroundings during the interviews did not invalidate this approach.

Measures taken to allow the maximum range for respondents to 'tell their own story' in relation to the topics explored, and therefore to 'free associate' within limits, were:

- The interview was structured leading from personal residence and history within the local authority or other job, to experience in the current role. This set a personal tone and allowed rapport to develop as people described where they were 'coming from'.

- Fluidity in the order in which topics were covered. Some interviewers free associated rapidly without allowing much space for interviewer interpolation; in others reflective comments were used to encourage elaboration of views.
- Views on climate science, the likelihood and opportunities for mitigation were usually approached in the second half of the interview, although some respondents launched in with energy in the early part of the session.
- Respondents were invited to describe images which came to mind when climate change was mentioned.

2.2.4 Research Ethics

The proposed research study was submitted to and approved by the Ethics Committee of the Department of Politics (as it then was) at the University of the West of England. In order to obtain informed consent, individuals were invited to give an interview in an initial email or letter which outlined the aims and methods of the research, explained who was being approached for interview and what they would be asked. It summarized the methods of the study and offered anonymity in any written material resulting from the research as well as secure storage of data. It made it clear that if individuals agreed to participate they could withdraw at any time without giving a reason (See initial information letter in Appendix 3).

The possibilities of harm to councillors and council officers from eliciting what were frequently well-rehearsed observations and arguments about sustainability seemed remote. However the possibility of evoking contemplation of the difficulties and damage that climate change might cause, and of personal discomfort, was not. It was important to consider how to avoid harm from dwelling on subjects which might cause anxiety.

Karie-Marie Norgaard (2006, 2011) shows how reluctance to address the issue of climate change is connected to the management of unwelcome emotions. Conversations about climate change can evoke feelings of guilt, helplessness, anger and anxiety and one is often aware that raising the subject could lead to resentment or irritation. It is not necessary to consider as harm the raising of uncomfortable aspects and likely changes in our shared living environment to wish, either to

minimize this, or to create an opportunity for expression of these responses in a situation safer than normal workplace or public conversations.

In order to guard against the possibility of leaving respondents feeling more worried, anxious or powerless about the issue of climate change, the perspectives offered by eco-psychology have been helpful (Macy 1998; Rust 2008). The overt acknowledgement of 'negative' emotions can be helpful if the energy they carry can be assimilated rather than suppressed. This is more likely when it becomes clear that these emotions are widely shared, and that they are a sign of healthful connection with the natural world and foundation of our human existence, and part of a process by which change on a wider scale can occur, a view in which power through connectedness is counterpoised to the common conception of power through invulnerability.

Hollway and Jefferson (2000) similarly point out that the raising of disturbing emotion is not necessarily harm, provided that this occurs in a sufficiently safe and containing environment, and may be experienced as therapeutic, that is tending towards wholeness and integration. Examples are given in the contributions to Clarke and Hoggett (2009).

These considerations indicated that an interview which raises feelings likely to be unwelcome in social settings, is less likely to be disturbing and more likely to be received positively where

- The interviewer has done his or her own emotional work in relation to the subject of climate change and is able to tolerate the feelings evoked, bear those of the respondent without her or his attention being interrupted by personal distress
- Feelings as well as statements are attended to and acknowledged; perhaps they are named, but often acknowledged without introducing vocabulary beyond what the respondent has already initiated
- Opportunity is given to the respondent to explore any personal thoughts and feelings about the current situation with regard to climate change, councils capacity to tackle it, or about the common future, even, or perhaps especially where these may not be shared in the work context;
- Opportunity is given to ground feelings in practical implications, and affirmation for actions already under way.

I made efforts to come as close to these conditions as possible, though this was not always achieved. Prior experience in interviewing, training in psychotherapy and counselling, and the support of supervision and the postgraduate group described below were all helpful in this aspiration.

It goes without saying that measures were also taken to avoid any practical repercussions to respondents from anything they might say in an interview. Were there to be attributable material in publications this might put the career of the respondents at risk if they were to speak frankly about the constraints they experienced in their work. This was the reason for which all respondents have been anonymized, removing identifying details from any quoted statements or any reported information in conference papers, reports or any other written material. Data will be stored anonymously. In this thesis, respondents who have been quoted at any length have been given pseudonyms. Quotes from (anonymised) interviewees are italicized whereas quotes from literature and online resources are not.

In addition to this, there was always the possibility that respondents would feel used by the researcher for their own purposes with which they may not be in sympathy. This possibility remained but it was hoped it would be minimized by clarity in the prior information, and by the invitation to a seminar towards the end of the research in which respondents were offered a chance to comment on the findings.

2.2.5 Interview design

The interview schedule which provides a rough framework for the interviews, opens with personal history behind the current role, and then asks about corporate action on sustainability, inviting stories both of successes and of limitation, before exploring personal attitudes to climate change and the future of energy, sources of information, and questions about sense of agency, both personal and corporate in relation to climate change (see Appendix 1). Respondents expectations and concerns for the future are invited. The last part of the interview was intended to focus on respondents' own views about ways in which councils' achievements could be improved from a local perspective and from that of national policy.

The interview was piloted and revisions made in several stages. In the pilot interviews I began supplementing questions about respondents' views on climate change with a number of statements on cards for respondents to consider. Because climate science is a controversial subject I sourced statements in the media or academic literature reflecting a spectrum of opinion on climate science, impacts and possibilities for mitigation. Some of the statements were more controversial than others, for example "Global warming is a hoax" (Senator Inhofe, a prominent climate denier); "Global average temperatures could warm by 4°C within 50 years" (Prof. Kevin Anderson, Deputy Director of the Tyndall Centre for Climate Change Research). The full list of card statements and their sources is given in Appendix 2.

I was also able to test methodologies with the group of graduate students in the Centre for Psycho-Social Studies at the University of the West of England. Feedback on the questionnaire raised the possibility that respondents might feel they were being tested and evaluated by being asked to comment on the card statements and feel unable to speak frankly. The statements were subsequently simplified, and during the pilot studies interviews were tried with and without the card statements. I am prepared to admit that inviting comment on the statements might have provoked some anxiety, but the focus proved a very useful aid to discussion and trigger for respondents to air their own views about climate change and related policy issues. Used in the second half of the interview, with respondents who themselves contribute to forming relevant policy and its implementation, it was not felt to be unduly stretching to invite views and comments about some basic propositions on climate science. Even though the inclusion of numbers in the statements did clearly faze some of the respondents, they had no hesitation in passing over those statements onto something else, and, particularly with councillors, seemed to have no difficulty transiting from one subject to an unrelated one. These 'transits' were included among the data which were examined for 'below the surface' meanings.

I also invited the postgraduate group on a separate occasion to note, when the subject of climate change was raised, what images came to their mind, and the feelings associated with these images. In this group, drawn from many different nationalities and life situations, the diversity was astonishing. The flooding in New York State was uppermost for an American participant, who felt better as a result of Mayor Bloomberg's statements about climate change. A new grandfather felt concern but, (noting the discrepancy), was not politically active. A Dutch participant's images

concerned sea level rise. A resident of Germany noted the increase in potential wine-growing area. A mother of twins remarked on her fear about climate change, but felt obliged to use the car to carry her double buggy. Deserts and starvation were also mentioned. An Eastern European participant found grounds for hope in the fact that young people were taking more responsibility for the environment, TV programmes were discussing climate change, and plastic bags were being charged for.

The feelings most often mentioned were of hopelessness ("it is too big"), and worry about the unpredictability of climate impacts. Coupled with this was concern about the absence of a discourse on climate change in several countries represented, and (for Southern Europe especially) the priority for economic survival. Some felt that in the UK also, concern about the economy trumps all the measures to deal with its destructive impacts. One participant felt that the expressions of helplessness could also be a defence against becoming more active. The comment from this more reflective group was a preparation for the variety of images and contexts from which climate change was viewed by respondents.

2.2.6 Sampling methods

Because the research was initially framed as concerning decision-makers, an attempt was made via web research and personal inquiry to establish who the key decision-makers were in relation to policy on carbon reduction. There is a well–established literature on how decisions in organizations can be traced and analysed. Methodologies have been developed from seminal work by Dahl (1961) and Floyd Hunter (1953), in studies of power elites in cities and local communities. The aim of these works is to identify which individuals constitute the power elites, those who control and influence decisions, and the mode of operation of this power.

The definition of power and of influence is not always straightforward; criteria are developed for determining what is being studied. Formal decision-makers are not always those most active in the development of proposals; examining the frequency of actions which propose, develop or block proposals may yield more helpful data than looking only at formal processes.

The ‘decision-making’ method of identifying elites was pioneered in Dahl’s classic study of New Haven, identifying the elites to be studied by following the development of policy and of its implementation in three key areas of importance to the community being researched. A narrative was constructed of the development of policy and its implementation on each issue, traced through documentation, committee minutes etc. The role of particular individuals was studied with the help of this evidence.

Floyd Hunter (1953) used what came to be known as the ‘reputational method’, using panels of informants to nominate candidates for interview as being ‘most influential’ people in the community, then asking ‘judges’ to refine the list. Later researchers have argued in favour of combining these two methods. Agger(1964) adopted a two-pronged approach, asking independent panels to nominate ‘leaders’ and at the same time examining decisions nominated by both panels and the authors to note the roles of individuals involved. Presthus (1964) found that the ‘decision-making’ and the ‘reputational’ approach each uncovered individuals not mentioned by the other, the reputational method identifying more ‘behind the scenes’ individuals some of whom did not participate formally in any of the decisions studied but were regularly consulted by decision-makers. Thus, despite criticism from Polsby (1980), each method appears to have some independent value.

The present research is directed less to identifying individuals with overall power or influence, as to identifying what factors influence and determine decisions with environmental impact within organizations, and how these bear on climate change policy. However the methodologies mentioned above have been useful in showing, in particular, how published documents, as well as personal informants, can help to indicate which individuals could usefully be interviewed.

An examination of formal processes indicated that decision-making was at least in theory a very diffuse process. Interviews confirmed that Initiatives might emanate from officers at various levels or individual councillors. In some councils the ruling party group as a whole, in others a smaller leadership group, held disproportionate influence in initiating measures and deciding whether others would be pushed through. In yet other authorities, officer initiatives seemed more frequent than those of councillors in the field of carbon reduction (councils sometimes described by their members as ‘not very political’).

2.3 The Sample

The sample in this study was based on identifying members and officers whose positions or job descriptions were related to sustainability or which gave them an insight into the operation of relevant policies and services. Because both members and officers have can have an input into action on carbon reduction, individuals in both categories were interviewed. These included relevant portfolio holders (including economic as well as environmentally-related jobs), members of planning committees, chairs of relevant scrutiny committees and officers in environmental health, development policy and transport areas.

The number who have this influence or who potentially have it is quite large, and it was not possible to be this thorough in all seven authorities studied. Therefore two authorities were selected for intensive case studies where many of the relevant influencers were interviewed.

These two case study authorities were selected because they differed significantly in geography, in the fact that one was rural and one was urban, and in political complexion. The rural authority represented a smaller , more isolated population with typically low wages, and had a smaller budget and fewer specialist officers. This suggested that there might be differences in attitudes to climate change. These two authorities could then be compared with regard to the difference in attitudes, and their action on carbon reduction, and how attitudes appeared to affect the measures taken.

In these two authorities, additional councillors without specific roles, some in the parties which were not in power, were included in the sample to achieve a better balance of party viewpoints.

In the other five authorities fewer respondents were selected, using information from websites, where possible supplemented with guidance from knowledgeable local informants. In this study snowballing methods were also used, to follow suggestions from respondents about other individuals with roles or influence in relation to carbon reduction or climate change policy. These authorities were selected to widen the range of types of authorities in the study as explained below. These helped to provide triangulation for the conclusions derived from the case study authorities. They also enabled interviews with a wider variety of individual respondents. It is from this pool of individual respondents that some of the findings on attitudes to climate change were derived.

Following an initial email contact, the interviews were conducted in person at council offices or in outside locations. The initial letter is given in Appendix 3. In obtaining informed consent, Hollway and Jefferson stress, it is important not to frame the research in such a way as to predispose respondents to giving a particular set of answers; the invitation, while indicating the areas of enquiry, should be open enough to invite diversity of response and not to indicate the hypotheses being tested. The invitation sent out referred to asking for councillors and officers' views on 'constraints to sustainability among decision-makers in local government in the South West of England'. It is possible that even this rather vague invitation was sufficient to select for respondents who had an interest in sustainability, who were overrepresented in the sample in any case because of the bias towards relevant job descriptions.

Of 55 requests, 39 interviews were obtained, a response rate of 70 per cent. The structure of the sample is presented in Table 1. It is possible that the number of Labour councillors interviewed is less than might be expected on the basis of national data, but the South West is traditionally a Liberal Democrat area and the Conservative vote has increased markedly over recent years. In many rural authorities no Labour members appear, but there are numerous councillors in the 'Independent' and 'other' categories. The number of Independents has always been high in local government, and their numbers include at least one recent defection from the Liberal Democrats

The interviews were carried out in the years 2010 – 2013. Those who declined to be interviewed or who could not be contacted after repeated attempts were disproportionately senior, and more frequently (among councillors) in the Conservative Party. As a group the sample does not accurately reflect the seniority or party balance of decision-makers or those who have most influence in this field. This was borne in mind when analyzing the results.

Table 1: Characteristics of the Sample

	Number	Percentage of interviews
Total interviews	39	100
Councillors	23	59
Council officers & former officers	16	41
Male	24	62
Female	15	38
Conservative	10	43 (of councillors)
Labour	4	17 "
Liberal Democrat	3	13 "
Independent	5	22 "
Green	1	4 "
Representing authority which is:		
Mainly urban	14	35
Mainly rural	16	41
Mixed	9	24

2.4 Case studies

To gain a more in depth understanding of the working particular local authorities, and in order to compare the achievements and influences on policy in contrasting circumstances, two case study councils were selected. As explained above, these were chosen to represent contrasting circumstances, and where personal contacts increased the chances of positive responses from respondents. "Weirbridge" is a relatively large urban authority with a Labour-controlled council, while "Greenleigh" is situated in a sparsely settled rural area, and is much smaller, with a Conservative ruling group. In both these authorities, control has passed from the Liberal Democrat party in the last decade. In addition to differences of size and rural/urban balance, there are contrasting challenges and pressures in these two areas arising from topography and economic profiles. Examining experiences in these very different authorities afforded for the research a clearer picture of the influences which led to such different outcomes.

In studying these authorities, documentary material from websites, and information on recent history from other local informants was particularly helpful. 20 of the 39 interviews were from these two authorities.

Other authorities were selected to enlarge the range of circumstances and characteristics of authorities studied. Of the additional authorities, one was a mixed urban and rural area with coastal settlements; two were rural areas with market towns, one a prosperous farming area with a Conservative administration and one a low income area with a more contested political make-up; one a town council in a medium sized town with a manufacturing base and rural hinterland; one a city which, unlike Weirbridge, is a unitary authority and therefore has a wider range of policy options; and one county authority. The county and unitary authorities control education, waste disposal and highways as well as having a larger budget and a substantial planning role. Respondents from these additional authorities were able to throw light on the way corporate culture differs between organizations, often with differing typical decision paths for policies relating to carbon reduction strategies. There were also very different opportunities and capabilities between the authorities, depending on their size, access to expertise and financial position. Information from the additional authorities was used to fill out the picture emerging from the case study authorities and to check the validity of the conclusions across authorities in differing circumstances.

2.5 Data analysis

Data from the interviews were analysed by grouping material into themes related to the research questions listed in Chapter 1, identifying the various categories of influences on carbon reduction actions and policies. The interviews were transcribed by the researcher and material grouped manually under the theme headings.

In addition data analysis sessions with other graduate students and tutors in the Centre for Psycho Social Studies were a valuable resource. Peers listening to sections of interviews were able to pinpoint and reflect on the way subjects positioned themselves in relation to the issues, and the dynamics of the process between interviewer and respondents, shaping the account which respondents gave of their roles and views. These comments were informed by an understanding of psychological processes such as transference and projection. The process helped to clarify interpretation of the interview data, highlighting its limitations and yet also increasing the potential information available from it.

2.5.1 Data analysis: Positioning

The conversation developed in a research interview is the result not only of the research design but of the interaction between two people; it is a co-creation. To fully account for this in the analysis of the data requires an understanding of how both the respondent, and through reflexivity, the researcher, position themselves in relation to one another.

Du Bois and Kärkkäinnen (2012) discuss stance, a concept arising within the field of conversation analysis. Taking a stance on an issue or object is seen as a triangle or a 'three legged stool' (Dubois 2007). A speaking subject, by an evaluative statement, or by a response conveying affect, evaluates an object (person, situation, thing, another participant's stance); by doing so the subject positions him or herself, as the kind of person who would take this stance. Sometimes, however, it is someone else who is positioned by this, such as the addressee (as for example 'I take a practical view'). By doing so also, the subject aligns with other subjects, their stance compared and possibly contrasted with that of other individuals.

Dubois and Karkkainen present 'a view of stance as a triplex act, achieved through overt communicative means, in which participants evaluate something, and thereby position themselves, and thereby align with co-participants in interaction' (2012 p 446). The psycho-social research tradition has a different approach to examining positioning. Here it is seen as the outcome of people using projective processes to position themselves, for example projecting certain characteristics, such as unconscious attributes or emotions, upon the other, thus also positioning the other.

A data analysis session with fellow graduate researchers early on in the study revealed an early respondent's identification of me, the interviewer, as an environmentalist. In this case the respondent had known me in another capacity, as a member of a local climate change group, which was not the case with others. His positioning in relation to this was as 'hard-headed', thus by implication, positioning others, and possibly myself, as rather 'fluffy' and driven by emotion rather than 'hard facts'.

Another example of this occurred when I was talking with the chair of a policy committee, a Liberal Democrat in a Conservative-controlled council. This councillor took pains to point out to me that we

don't live in a world of ideals, we live in a world of compromise and what is possible. He mentioned that the leader of the council had recently asked him to continue in his position, although all the other chairs are held by Conservatives. He said that he prefers to advance step by step instead of in big leaps (demonstrating with fingers) '*because you might have missed something half way along the leap*' that will do what you need. I felt that I was being admonished, as someone who might propose big leaps.

Other respondents made efforts to interrogate me about my own views. I initially advanced my academic credentials and explained my questions in terms of policy options, but as time went on I found that while I became more sympathetic to the way respondents were involved in very constrained and often unenviable collective decisions, my own positioning within the interviews began to alter. I would acknowledge my own role as a parish councillor in my village. I felt that I could do this without revealing any party affiliations or views on wind and solar farms, other than a general interest in the topic, though some elected respondents certainly did angle their comments to try to find out these things. I sought to ensure that respondents felt their expertise appropriately valued, but being a junior participant in the process of local government and having a hands-on acquaintance with some of the issues may have helped this.

Dubois (2007) notes that when 'lining up', that is, comparing their stance with similar dimensions of another's stance, the two positions may not be identical, however a relationship is implied; and that participants in a conversation monitor and adjust the "stance differential" between themselves and others in the conversation, on occasion narrowing the stance differential, but often leaving a strategic ambiguity. This description aptly describes a dynamic which I experienced in the interview process. Respondents would sometimes ask, explicitly or implicitly 'Is that the sort of thing you want to hear?' In a role analysis session with other postgraduate students, the idea of the hiddenness of the people who were giving me their story arose, and resonated with my experience of the way many of them tried to fit their narrative to what they thought I wanted to hear. For example when I introduced the idea of tipping points in climate, which was new to him, one senior councillor said, after a long pause:

I guess if you're talking to me now – if you were to speak to [X], who is a councillor, you'd get a completely different view. Because he's a real navvy about things like this…. I'm not a very good subject for you

On the other hand a number of respondents seemed to be assuming that I agreed with them, or was at least neutral, as a result of my accepting responses. For example I was informed about the Transition Town approach in the South Hams as if this would be a new and strange concept to me. Sometimes I would have objected to views being voiced (for example about the negative climate impact of windfarms as well as a variety of other social topics not relevant to the research) had circumstances been different. The image arose in the role analysis session of my 'putting on a false coat'; and yet the position of openness required to let respondents speak was seen also to have an integrity of its own which, rather than seeking to challenge, allows curiosity to lead further inquiry.

Some have used the 'I-poem' method to track changes in subjectivity during an interview (Gilligan et al 2003). An I-poem is constructed by placing together all the statements made by the respondent which contain the pronoun 'I', in order as they occur in the interview. I experimented with constructing I-poems to explore the positioning of different participants as it developed during the interview, and found that it brought into clear relief some of the differences between respondents. The results are examined and some of the I-poems given below in the note to this chapter and in Appendix 4. I was charmed by the clarity with which the I-poems illuminated the character of the speaker, and found that in most cases they offered insights into the subjectivity of the respondents. There were certain deficiencies in the method (occasioned by the way some people use 'we' much more often, or 'you' when they mean 'I' or 'we') but there were also useful examples of positioning both politically and in relation to the interviewer. The I-poems may also serve as an introduction to a few of the *dramatis personae* appearing through the interview material described in chapters 4 and 5.

2.5.2 Data analysis: Feedback from respondents

It was hoped to hold a feedback session with some respondents to obtain their comments on the findings. After preliminary analysis I sent a two-page summary to respondents and an invitation to a seminar at the University of Exeter, which was accessible to where many of the respondents lived.

Despite one expressed intention to attend and apparent interest in this during the interview, none attended the seminar. However I received interesting verbal feedback, both from a few of the respondents and from other councillors and officers with whom I had discussions or who had received the summary from others. These responses very much confirmed and in some cases developed the findings I had aired in the summary, and gave more specific examples of the impact of financial austerity on the increased motivation to seek energy savings; and in the context of diminishing capacity to invest to achieve this. I have incorporated this feedback in the analysis in the following chapters.

2.6 Reflection on research methods

This research sits, methodologically, and perhaps uneasily, between the traditional elite studies of political science and the psychosocial approach. As explained above, I wished to elicit emotional responses and to interpret the data in a way which would allow me to explore defended positions and defences as well as attitudes directly expressed in verbal accounts; to 'research beneath the surface' as well as to learn from information and opinions given in the interviews. However, it was not possible to use the prototype psychosocial narrative interview, in a relaxed situation and with unfettered timespan. Local government staff have almost universally been reduced without parallel cuts in services and functions, so that officers' time was particularly constrained. Several of the respondents asked explicitly about the time required for the interview although I had mentioned this in my initial communication. (Most of those approached had forgotten about this by the time I phoned them.) However degrees of suspicion varied greatly, and as I have remarked, some respondents, particularly councillors, rambled very freely on slight topic suggestions. The hypotheses to be investigated did require a certain amount of factual, historical and organizational data, without which it would have been difficult to situate the role of subjective attitudes; and I felt that approaching the interviews through this more factual material laid the groundwork for later, more personal types of questions. The blending of these two types of research methods may have limited the success of each, but perhaps the opportunities for exploring the personal attitudes of decision-makers could be expanded only by narrowing the field of study or with a smaller number of respondents and higher refusal rate.

A second challenge faced during the research period from 2008 – 2013 was the dramatic change in the context of the study resulting from the financial crisis, consequent budget reductions, the 'Localism' approach, and revisions to the National Planning Policy Framework. The impact of these changes is described in Chapter 3. As the study progressed, mention of financial anxieties increased in prominence in the interviews and grievances over planning processes were mentioned more frequently. Reflections on the carbon reduction policies of 2008-10 receded in importance and to some extent the whole question of climate change policy has, to councillors at least, become less valent. For this reason I have found that the study reports on the impact of these changes in councils' ability and their discretion to undertake carbon reduction measures more extensively than was anticipated when it was designed, largely in order to discriminate among the various influences upon local policy and its implementation. The changes in external objective factors have been an overwhelming influence in many cases.

Despite the temptations to address issues currently arising in relation to vulnerability to climate change (the floods of early 2014 for example) the cutoff point for the research was taken to be the end of 2013.

Note to Chapter 2

I-poems' as an approach to positioning and subjectivity

In evaluating the data provided by the interviews, we must take account not only of the selectivity inherent in the sampling process, but also the way in which responses are shaped by the interaction with the interviewer and the ways in which respondents and interviewer reciprocally position themselves, as I discuss in section 4.1 on positioning, in Chapter 2 on Methodology.

A method of analysis called 'I-poems' is investigated here to throw light on these aspects. I-poems have been used to track subjectivity, and changes in subjectivity in interviews over time (Gilligan 2003). The thesis is that certain voices in interviews are brought to the fore and others are suppressed.

The I-poem is constructed by abstracting from the interview and placing consecutively all the statements involving the word 'I', in the manner shown below. From this, the questions 'Who is telling the story? Who is listening' can be more easily considered.

Can any of this be seen in I-poems derived from my interview material? I experimented by constructing an I-poem for a senior councillor, Charlotte, from her account of her experience on the council:

I've done, I think, 38 years
I've almost never won my seat by more than about 39
Then in the last 3 times I've stood it's gone into the hundreds

I'm a city centre ward
I've always thought that the services we give [are central]
I have to balance that with
I think the more you're on the council the more you have to look at a broader field.

She is experienced, balanced, central, increasingly popular and trusted. Later:

I'm not too happy with wind turbines
I don't think they're worth it
I think wind can be used from the sea.
I think you would destroy what we've got
I think you could do more investing, in, perhaps…
If you're sensitive to noise –
I'm one of those people I can tell you
I just don't sleep
I just sleep 4 hours a night
I don't have her brains (laughter)
I think there's other ways of looking at it

The stance on wind turbines is one of policy, rather than an affective expression. Note the 'you' here, often used by speakers taking public positions, when 'we' or 'I' might be equally appropriate, and those who feel utterly excluded from decisions might use 'they', as in 'they could do more investing..'. The 'you' distances Charlotte from the decider about investment, perhaps meaning or including the proponent of onshore wind (perhaps including myself?). She certainly positions herself later as someone who has common sense (mentioned twice), realistic – in the context of worries about the future – and cannily considering, if she is being 'pushed', what is the hidden agenda! I think this may well be positioning herself in relation to me.

It was I who introduced the comparison with Mrs Thatcher when Charlotte mentioned her sleep pattern, but the laughter shows that this was a welcome comparison, which she elegantly turns aside, partially. Thus, the I-poem does not give the whole story here, but in certain dimensions, summarizes it.

Perhaps a more significant omission is a positioning statement of the interviewer, and the interaction between the interviewer and respondent as they seek to position each other. For example, when Charlotte makes the statements,

I have 6 – 2 in New Zealand and 4 in Cheltenham
One thinks of their – but I tend to be realistic
How realistic is it? I don't know

it is in response to a question about her grandchildren, positioning her as a mother and grandmother, and the interruption of her thought about their future is interesting in that context.

A contrast to Charlotte's material is provided by the I-poem derived from the interview with Gerard, which illustrates him very self-consciously taking a stance.

What I would like to see
I'm a bit cynical I'm afraid
I think I'm pretty much to the more radical section of, of environmentalism
To play a straight bat as far as I am able
I think you've got the micro and the macro here
The most recent one I've given is much bigger
I've just given a tiny sum

He uses phrases like 'I've been badgering..' 'I've tried', 'those things are what I want', 'I opposed that', and later:

I'm out on a bit of a limb
I think, I'm sure I can justify that position
I can justify it to myself
I can justify it to anyone
So I'm clear where I'm coming from and what I believe in
If that upsets people I'm sorry about that cos I don't want to upset anyone, but
I think
I'm a conviction politician
I'm desperately keen to represent my people and help them every way I can but
I can't give ground on this

I don't care what my party says

There is a slight belligerence within the rules of the game, exemplified by his cricketing analogies. The positioning is mainly in relation to other councillors, other parties, and occasionally, his own party, rather than towards me as interviewer, but avoids vilifying anyone. He from time to time apologizes for rambling, courteously offering to move on from what to him is a vitally interesting excursion.

Again, some of the statements about his position are party relevant and couched in the first person plural rather than singular. Fuller sections of I-poems can be found below.

I would argue therefore, that although useful, the 'I-poem' in this context has significant omissions. It omits the statements that include 'we', which often occurs in policy and political identification, or in the case of officers identification with their council. From the statements couched in the collective 'we' one learns of the stance of the party group, often the council executive. The 'I-poem' also omits the parts where (councillors usually) are speaking in terms of 'you', meaning, themselves, as in 'You've got to go on your common sense', or 'Those houses are worth £57 million. You can now borrow on that'.

A particular case where the I-poem does not collect the key statements is with Alison, a director. Her main explanations are all 'we' statements about what has been done or decided (though perhaps some of them could be expressed as 'I's), and she uses 'I' mainly to qualify statements with 'I think', 'I mean', 'I suppose', 'I don't know if you know?'. As she introduces herself, her phraseology could not be more different from Gerard's. Instead of his 'I've spent'. 'I've given', 'I did' or 'I took the position', she says 'I was involved in', 'I've been involved with'. This is significant in that it corresponds very much with her participative leadership style, which I heard appreciated by another respondent in her department. The I-poem is also misleading in the case of Alison, because she so often uses constructions like 'I don't know whether…', and yet provides more relevant information in a 40 minute interview than almost any other informant, including those who spoke for 2 hours. Despite these significant omissions the I-poem does give a very vivid insight into Alison's way of positioning herself within her organization. She makes no personal criticisms but gives a frank view of processes in which she has been a participant. Perhaps there was an additional freedom to her comments because the interview took place on her last day at work.

In Jack's interview, the I-poem also conveys rather accurately his self-positioning as an observer in the debate about climate change which rages in his council, but one whose commitment is to his constituents for whom other things are more important – the fortunes of farming, rural isolation, and urban poverty.

I do think climate change is on the back seat at the moment
I think there are a lot of things we all can do
But I think there's been a real step up in the last 30 years, the last generation…
As far as I'm aware it i'n't happening in the South West and it i'n't happening in the UK.
although I do me bit to support anyone in the world, they are really the most important to me,
so I wouldn't really know

Finally, the I-poem is redundant in analyzing the positioning of John, a councillor representing a rural ward and who has a farming background. His concern with our respective positions was overt: his first words to me after we sat down were

'Who are you representing?'

This was then followed by:

'And the basis of your research?'

Once my explanations about the University and the research were given, I felt that our relationship was one of equality; there was neither suspicion or deference. Very quickly, a reciprocal account was given of John's background, including his great grandfather's purchase of the land in 1884, and the importance of the nonconformist tradition for his views on politics.

Some fuller sections of the 'I-poems' quoted here are given in Appendix 4.

Chapter 3. The role of local authorities in climate change mitigation: the national and international context

This chapter provides the policy background to the role which local authorities in England were expected to fill in relation to policy on climate change. It opens with a brief commentary on international policy on climate change mitigation, and the positions and ideological assumptions which have been prevalent, thus providing a background to the research study. British policy on climate change was not made in a vacuum but in the context of a developing debate which took place in many fora, including, from the early 1990's on, the international negotiations towards the Kyoto Protocol, which concluded by enshrining market mechanisms as the dominant approach. At the same time research and policy thinking in the UK could claim to be highly influential in promoting the urgency of dealing with climate change in the international context. Second, the chapter considers greenhouse gas emissions and the policy response, setting the UK within a wider international context. Contrasting outcomes in the renewable energy sector are reviewed as an illustration of policy differences between the UK and other European countries. The chapter then sets out British climate change policy with particular focus on the period between 2006-13. It then outlines the structure of local authorities in England and their role as agents in carrying out carbon reduction. Finally it examines the impact of the localism agenda on this role.

3.1 Greenhouse emissions and the policy response

The first international treaty on climate change, the United Nations Framework Convention on Climate Change (UNFCCC) was signed in 1992, committing the parties (including the US) to report their emissions, undertake limitations (generally unspecified), and the industrialized (Annexe 1) countries to return emissions to 1990 levels by 2000. However the UNFCCC had no teeth nor was this level of emissions reduction legally binding. Few governments made a serious effort to meet this aim, and those nations who met the target did so largely by historical accident. Russia met its target because of the collapse of the Soviet economy, Germany because it absorbed the shrinking East German economy, and Britain because it was privatizing electricity generation and cutting subsidies for coal production (Dessler and Parson 2006, Giddens 2009)

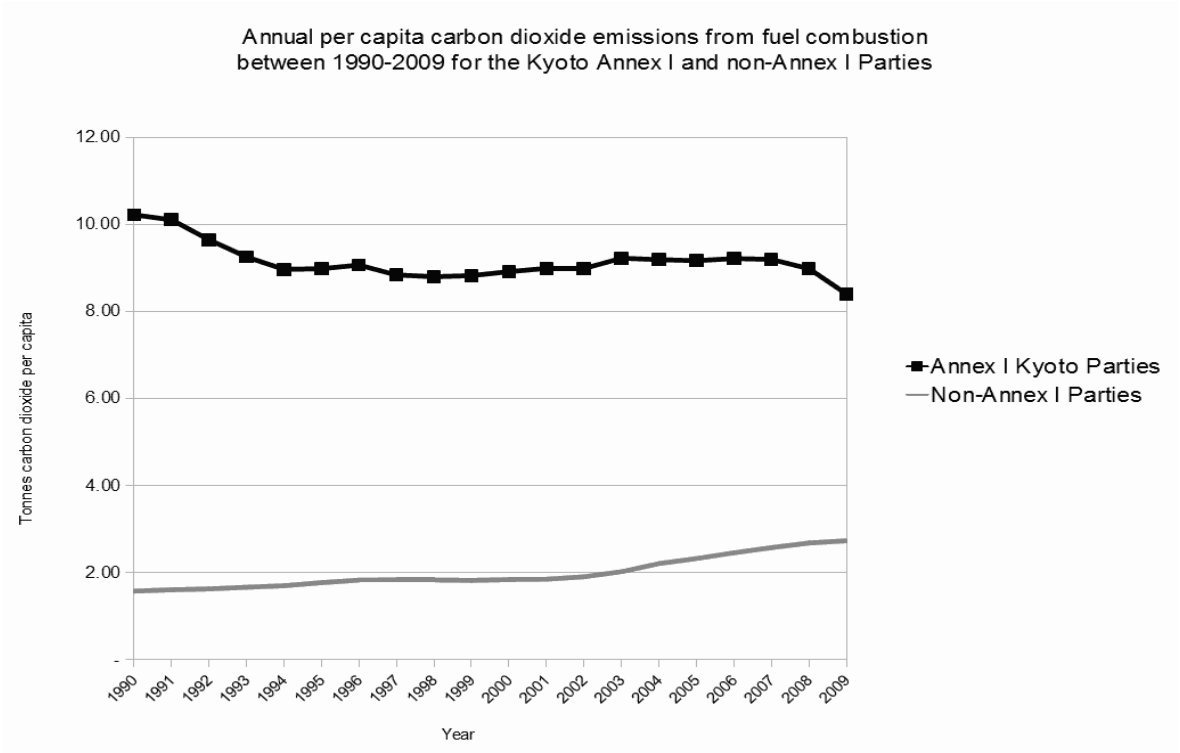
By the time the Kyoto Protocol was signed after exhaustive negotiations in December 1997, and the Clean Development Mechanisms which allowed carbon trading to take place were defined and

agreed in 2002, the USA had weakened and then declined to ratify the Treaty. Among the features to which it objected was that it enshrined commitments only by industrialized (Annexe 1) countries to cut their emissions. Nevertheless the treaty came into force in February 2005 with ratification by 55 countries (the last being Russia) that accounted in total for 55 per cent of emissions. It included differentiated emissions cuts for industrialized countries and if implemented fully, would have reduced emissions by on average 5.2% below 1990 levels for participating countries.

In fact, even many of the ratifying countries fell considerably below their target cuts (the UK figure for example was 12.5%, the EU15 8%) or achieved them only with the aid of the Clean Development Mechanism offsetting processes. These trading mechanisms provided cash for emissions-saving projects in developing countries, sometimes in dirty industries which, it was claimed, would otherwise have been even dirtier. Definition and verification of many projects was faulty, and their contribution to reductions in emissions was at least questionable (Lohmann 2006). The Reducing Emissions from Deforestation and Forest Degradation (REDD) scheme, providing carbon credits for maintaining forests, has also led to takeover of forest lands by large companies and in some cases the establishment of monocultural timber and palm oil plantations in place of indigenous vegetation. Emissions from international aviation and shipping were excluded from the Protocol's emissions measurement, and there were no sanctions against those countries which, like Canada, repudiate their commitment altogether. By 2006 scientists became aware that CO2 concentrations in the atmosphere were increasing by unforeseen levels on a year by year basis.

The Kyoto Protocol did not halt world emissions as hoped; but the emissions data indicate that the Annexe 1 (industrialized countries) did reduce their emissions, using the authorized measures (UNFCCC 2014). 'There are more successes than failures and the sum of emissions from nations with Kyoto targets have fallen significantly' (Clark 2012). This was achieved despite the fact that the USA, an Annexe 1 country, increased its emissions by 17% (it had promised a cut of 7% but then did not ratify), which increased to 25% when imports and exports were factored in (Clark 2011). The signatories to the Kyoto protocol could therefore claim some success. In the same period however, the emissions from non-Annexe 1 countries rose sharply, as Figure 10 makes clear.

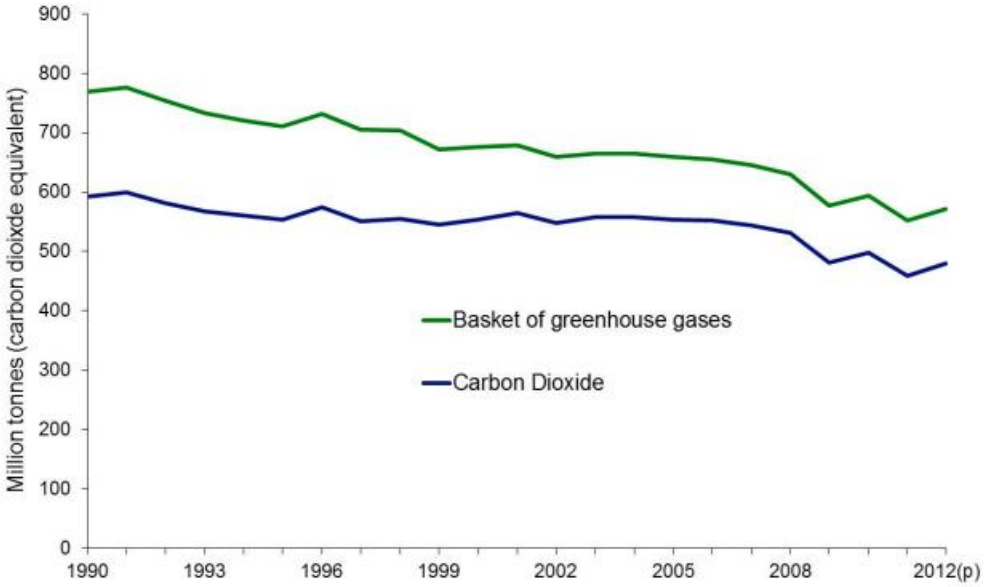
Figure 10: Annual per capita CO2 emissions 1990-2009



Source: Wikipedia
https://commons.wikimedia.org/wiki/File:Annual_per_capita_carbon_dioxide_emissions_from_fuel_combustion_between_1990-2009_for_the_Kyoto_Annex_I_and_non-Annex_I_Parties.png using data from International Energy Agency (IEA) publication "CO_2 Emissions From Fuel Combustion: Highlights (2011 edition)

The fall in Annexe 1 emissions has been achieved partly by the migration of polluting industries to non-Annexe 1 countries. For the purposes of accounting under the Kyoto protocol international rules, emissions are calculated on a geographical basis by country of origin, rather than being attached to the country in which the associated consumption takes place. In the period 1990 - 2008, UK emissions fell by 28 million tonnes, 'but when imports and exports are taken into account, the domestic footprint has risen by more than 100 million tonnes. Europe achieved a 6% cut in CO2 emissions, but when outsourcing is considered that is reduced to 1%' (Clark 2011,) Overall, world greenhouse emissions continued to grow, by approximately 1.4% in 2012 (PBL 2013). There is not the space here to conduct a thorough comparison of the policy response across nations to climate change. However, two indicators of this response are trends in greenhouse emissions and in the development of renewable energy sources, which may be regarded as policy outcomes.

Figure 11: UK Emissions of greenhouse gases 1990-2012 (geographic basis, provisional)

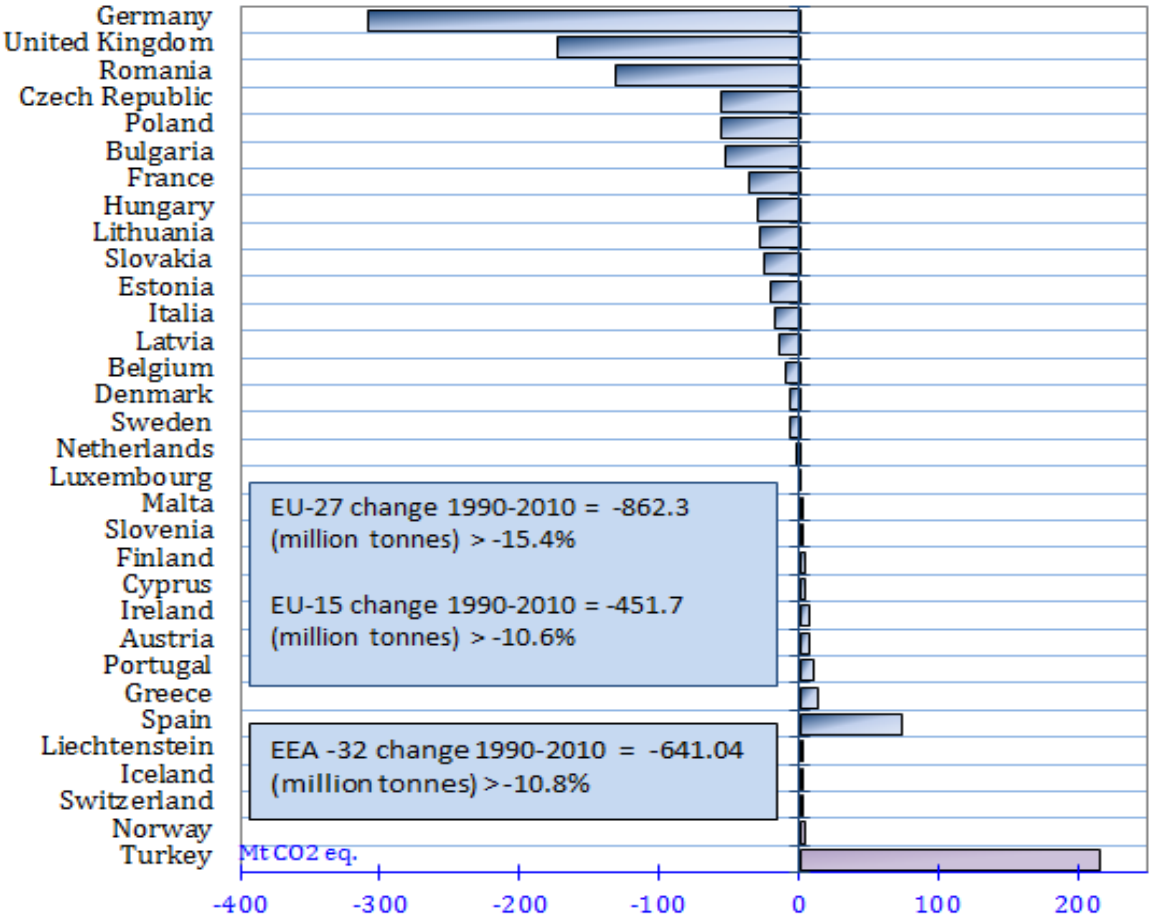


Source of data DECC (2013), graph Hunt (2013) http://www.carbonbrief.org/blog/2013/03/uk-greenhouse-gas-emissions-rose-in-2012-decc. Published by Carbon Brief under a Creative Commons License. Attribution-Noncommercial-NoDerivatives 4.0 International.

The decline in UK emissions within its borders of about 24% between 1990 and 2008-11 took place largely during the 1990's as a result of energy market changes and the closing of coal power stations in the 'dash for gas' (Figure 11). UK emissions growth resumed in the early 2000's, but recession helped to achieve further reductions towards the end of the first decade of the century, alongside a sustained reduction in the carbon intensity per £ of GDP (Pielke 2009), a trend shared with most European countries. The Baltic Republics and Eastern European countries achieved greater reductions and Germany a similar fall despite an economy growing more steadily. Greece, Portugal, Ireland and Spain all increased their emissions (EEA 2012) (see figure 12).

Thus considerable differences in both policies and outcomes appeared even within Europe. Energy policy and the energy generation mix in different countries offers some explanation for this and another insight into the variety of approaches to climate change. Here the proportion of renewable energy in a country's energy budget is regarded as one indicator of the impetus with which reductions in fossil fuel use have been pursued. It might be argued that the development

Figure 12: Greenhouse gas emissions in EEA-32 countries: Change 1990 – 2010



Source: EEA (European EnvironmenAgency)(2012) Greenhouse Gas Emissions Trends (CSI 010/CLIM 050)

of nuclear power should be considered similarly. However, although nuclear power is a low-carbon energy source and has a fraction of the carbon emissions of fossil fuel generation, I have not used it as an indicator of policy on climate change because policy on nuclear power is strongly influenced by a number of political factors other than climate change (for example perceived risks in operation and waste disposal, historic involvement with production of nuclear weapons).

World-wide, while the average proportion of renewable energy production is around 11%, the median country produces approximately 1 % of its energy mix renewably. Natural resources vary widely between countries, so that this is a very imperfect indicator of policy commitment, and measurement issues produce varying estimates of the proportion by country (Ecowatch 2012, Hull 2012)

In Europe, the Scandinavian countries and the much poorer Baltic republics have achieved the largest proportion of renewable energy, with a fifth to over a half of their energy provided from renewable sources (Eurostat 2014). Portugal, Austria and Romania all have around 25% of their energy supplied from renewable sources.

In comparison to other countries, and particularly to European nations such as Germany, the Scandinavian countries, and the Eastern European and Baltic republics, the UK has been a slow starter in developing renewable energy. Rather than adopting the Scandinavian model which favours community windfarms, the UK government sought to induce big developers and encountered great opposition from the local public and entrenched energy interests (Mitchell 2009)

However the discussion of UK climate change policy below indicates that there was more positive action on other fronts.

3.2 The ideological context for climate change policy

A core value and assumption that framed action was an unquestioned commitment to economic growth as chief indicator of economic success and improved standard of living. Although this was being questioned in minority sections of University economics departments and in the sustainable Development Commission, (with notable products including Tim Jackson's 'Prosperity without Growth', 2009) the right of all countries to grow their GDP, and the benefits of this approach, were considered axiomatic.

Also virtually unquestioned was the commitment to reducing barriers to global trade, and concerns that environmental measures should not handicap businesses' competitiveness, particularly if the Annexe 1 countries (the industrially developed economies) were to be treated differently from the

developing world. A consensus, sometimes referred to as neoliberalism, had developed within industrialized nations and international financial institutions hostile to government intervention in the economy whether through regulation, taxation policy or state enterprise, and which emphasized the gains from increasing trade without particular regard for the impact on income distribution. This approach was supported strongly by the fossil fuel energy companies and the energy intensive sections of industry, whose profitable operations depended crucially on fossil fuels (Leggett 2000). These sectoral interests opposed the use of pricing and regulation (for example, the carbon tax favoured initially by some governments) in favour of voluntary agreements in domestic policy (for example the EU's ineffective voluntary agreement with manufacturers on improving the carbon efficiency of engines) and 'market solutions' which involved the trading of carbon emissions permits. These were also, not unnaturally, favoured by many financial institutions who would over the following decades engage in these markets.

The rationale for carbon trading models such as the EU ETS was that measures to reduce emissions could be taken where this was most cheaply accomplished. This followed the example of the successful cap and trade scheme to reduce emissions of sulphur dioxide in the US, whereas regulation would force all companies into measures which might result in bankruptcy for those where costs were highest.

The 'Clean Development Mechanism' (CDM) which was eventually incorporated in the Kyoto Protocol allowed nations to purchase offset certificates representing greenhouse emissions saved through the use of these funds. Much of this carbon finance was claimed by enterprises in developing countries undertaking less polluting manufacturing processes than they might otherwise have done, leading to criticisms such as those of Bullock et al (2009) and Buen (2013) and lampooning in Cheat Neutral (2006). No global cap was set, and only developing countries accepted targets for emissions reduction; and there were no sanctions for failing to meet their targets. This outcome owes much to the influence of the US, which, as noted above, in the end did not sign the Kyoto protocol (Leggett 2000).

Neoliberal ideology, with its preference for free markets and private enterprise over bureaucracy, and its opposition to state intervention, has often been linked to the preference for dealing with climate change through market mechanisms , rather than targets and regulation. However, what

distinguishes 'neoliberal' approaches from others, such as Contraction and Convergence (which is a cap and trade system), or the original proposal for the Kyoto protocol, which was based on carbon taxes rather than the CDM, is not the reliance on the operation of markets of one kind or another for the measures to be effective. It is the scope for financial institutions or multinational corporations to make money out of carbon trading and the absence of challenge to existing large players in energy intensive sectors. An effective carbon tax would put brakes on fossil-fuel intensive economic development, but so would an effective cap and trade system such as the European ETS was meant to be; whereas the CDM has allowed carbon-intensive growth to progress in both wealthy countries, who can provide carbon offsets, and developing countries, who can obtain subsidies for investment in industry which is less dirty than it might otherwise have been in a hypothetical, still more polluting, alternative scenario. An effective Cap and Trade system would result in fossil-fuel intensive industries paying considerably more for their inputs, though carbon trading might still be profitable in some degree.

In 2005 the EU introduced the Emissions Trading System for energy intensive industries, which was an attempt to place an overall cap on European emissions and to enforce a rising price for permits as the cap was reduced. The effectiveness of the scheme was eviscerated by the excessive allocation of permits initially on a historic basis to existing energy intensive industrial producers, which amounted to a subsidy to these businesses who were able to auction their surplus permits. Subsequently the supply of permits to the market was excessive in relation to reduced demands during the recession from 2008 and a proposal to postpone auctioning further permits was defeated in the European Parliament after intensive industry lobbying. The price of carbon has therefore fallen dramatically to a level where it does little to encourage emissions-reduction. Dieter Helm has argued that because of the predictable instability in the carbon price under trading schemes, a carbon tax which rises slowly and predictably would offer a much greater incentive to industry to decarbonize (Helm, 2012).

Because of this framework which came to dominate discussions of climate change policy, governments, including the UK, tended to prefer technological approaches, involving large scale actors, to demand management, an approach which Rayner (2008) refers to as ecological modernization. Alongside this comes a suspicion of value-based solutions and an advocacy of 'evidence-based policy'. However basing policy on evidence about 'what works' necessarily narrows the range of permitted problems and solutions in the debate towards those that have been tried and

tested before. 'In this view values are not only detrimental to understanding and participation, but policy positions based on values are "likely to fail because they may not be grounded in the economic, institutional and social reality of the problem"' (The Urban Institute 2003, as cited in Ney, 2009, p4). These arguments also fail to recognize that policy positions always and necessarily imply value positions.

3.3 Climate change policy in the UK

3.3.1 Rising up the agenda 1990 – 2010

The role and achievements of local authorities in climate change mitigation can be understood only in the light of evolving policy on climate change within the UK and the increasing obligations which national government has placed upon them. Policy has evolved piecemeal and not all authorities have been affected at the same time. Climate change began to appear on the political agenda under the premiership of Mrs Thatcher in the 1990's. Early measures included the Non-fossil fuel obligation placed on energy companies in 1990, which became the Renewable Obligation in 2002; the Energy Efficiency Commitment required of energy companies to help their customers to improve their efficiency, and the Climate Change Levy in 2001. The UK joined the European Union Emissions Trading Scheme (ETS) in 2005 which was designed to achieve emissions reductions in high energy-using industries and added impetus to the approach of the then Labour government.

The provision of scientific information to the public on climate change and exhortation to save energy did not produce notable responses in behaviour change, and the progress on renewable energy was slower than that of many European countries. The UK response to climate change has been characterized as 'Hot Air and Cold Feet' (Lorenzoni et al 2008), with practical interventions falling far short of rhetoric. However, The UK Treasury commissioned in 2005 the influential Stern Review of the Economics of Climate Change (2006), showing that the balance of costs and benefits favoured early mitigation measures. Following this and the conference 'Avoiding Dangerous Climate Change' at the Met Office in 2006, a suite of policies did emerge, including the Climate Change Act 2008, the Carbon Reduction Commitment and the allocation of responsibility to government departments for carbon reduction. Changing conditions of policy allowed relevant policy networks (including the renewable industry, environmental ngo's and some sections of the business community) to become

more influential (Toke 2010). Policies to encourage renewable energy development, initially through Renewable Obligation Certificates, and later through Feed-In Tariffs were also instituted. The major parties began to compete with each other for green credentials and era of consensus on tackling climate change began, leading to greater policy commitment, and, further, an aspiration to leadership in international discussion and climate negotiations, including the appointment of John Ashton as the UK Climate Change ambassador (DEFRA 2008, Carter 2014).

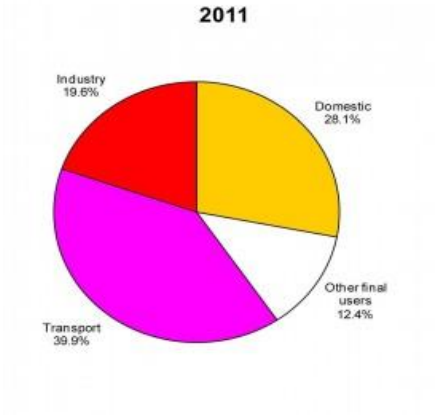
The Carbon Reduction Commitment (CRC) was introduced in 2007, with mandatory carbon trading for large companies and public bodies. Businesses and public bodies using over 6,000 kWh per annum were to agree carbon reduction measures and were to pay £12 per tonne emitted. In the initial scheme, organizations which successfully reduced their emissions received a re-allocation of some of the revenue as incentive payments from the CRC fund. Larger local authorities such as Plymouth and many of the counties came within the purview of the CRC until 2012, when street lighting was removed from the energy usage qualification. Currently very few authorities qualify, and the positive financial incentive has been removed with all revenue going to the public purse.

The UK was one of the first countries to establish a specific department for climate change mitigation (DECC was created in 2008) and under the Climate Change Act, the UK was the first country to enshrine emissions reductions targets in law. The 2008 Act included a specific target for the UK to reduce its emissions of greenhouse gases by 80 per cent on 1990 levels by 2050, and to set up and implement a series of five year carbon budgets in the intervening period to ensure that shorter term goals were set consonant with this target.

Opinions have differed on whether the introduction of targets and indicators in general – what Hoggett (2013) terms the 'performative culture' – is a distraction from the business of actually meeting them. In this light, Hoggett suggests that targets appeal to governments who need to look *as if* they are doing something while safe in the knowledge that they will not be in power when it becomes clear that the targets are not being met (2013a). In Pielke's verdict, the Act was 'fundamentally flawed in its basic conception' and 'all but certain to fail to achieve its ambitious emissions reduction goals in both the short and long term', based on the premise of annual economic growth rates of 1.3% a year and population growth to 82 million by 2050 (2009, p. 1), and Lockwood (2009) discusses the Act's political vulnerability.

However to ensure that targets were taken seriously the UK Climate Change Act did set up its own watchdog. The independent statutory Climate Change Committee was established under the Act to recommend budgets and monitor developments under the Climate Change Act itself (UK Legislation 2008, CCC website http://www.theccc.org.uk) The Act was taken as a lever to engage local authorities in emissions reduction in relation to these targets. For example DECC/DEFRA's 2009 Report 'Climate Change: Taking Action' elaborated the system of Departmental responsibility for sections of the carbon budgets.

Figure 13: Energy Use by Sector, 2011



Source: Digest of UK Energy Statistics (DUKES) All content is available under the Open Government Licence v3.0 quoted in http://www.eversogreen.co.uk/blog/2012/08/reducing-the-uks-energy-consumption/

The main uses of energy by sector are shown in Figure 13, which shows that 68 per cent of energy is used by the transport and domestic sectors. The Department of Communities and Local Government (DCLG) was allocated lead responsibility, through local government, for promoting the reduction of greenhouse emissions from 'homes and communities', ie emissions arising from domestic energy use, excluding transport (DECC/DEFRA 2009). The Climate Change Act targets also seem to have provided the policy under which further reporting requirements were inflicted upon local authorities, some of which participants in this research did clearly regard as control freakery and to which they adopted a 'box ticking' approach, but which, others remarked, maintained a focus on the task of carbon reduction in a way which has lapsed following the removal of these requirements. In 2009 the Low

Carbon Framework Pilot studies were funded to test differing approaches to how councils could encourage carbon reduction.

Although piecemeal, the measures brought in by the Labour government had driven a focus, in most local authorities at least, to demonstrating progress towards emissions reduction. It has been shown (Figure 11) that although emissions rose slightly in the early 2000's they then flatlined during a time of economic growth and, predictably, declined during and after the onset of economic difficulties in 2007.

Attempts to alter individual behaviour patterns through public information campaigns, (such as the 'Act on CO2 initiative' including leaflets and TV ads) were not discernibly influential in changing household lifestyles, though a number of smaller projects funded by DECC were able to show productive involvement by community groups and educational institutions, for example the Play It Cool project in North Devon promoting energy-saving action in schools (DDE 2008). One particular source of emissions, travel, continued to rise as modest increases in household energy efficiency were observed (see Table 2 below).

Emissions of CO2 in the transport sector, which accounts for nearly 40% UK energy use, did not decline until 2008 (Hunt, 2013). Rayner (2008) argues that the 'predict and provide' approach in the transport sector was due to overwhelming concern about competitiveness as a driver of economic growth and its presumed inextricable link with transport; the lack of an overall strategic approach with targets for emissions from the sector, and disjointed policy-making, with the most powerful departments 'inadequately committed'. He also points out that 'Powerful discourses associating individual freedom and mobility with car-use make strong demand management electorally risky' (Rayner 2008, p. 384).

3.3.2 Conflicting priorities under the Coalition government after 2010

Since 2010 two other features of government policy have influenced climate change politics: financial austerity and the 'localism agenda'. Austerity has been implemented through substantial cuts in public spending, affecting both local government and central departments. The floods in the winter

of 2013-14 for example, sparked intense debate about the extent of reductions in the budget of the Department of Environment, Food and Rural Affairs (DEFRA), affecting its ability to cope with extreme weather emergencies and to fund adaptation measures such as flood control (House of Commons 2014). A report for the Joseph Rowntree Foundation (Hastings *et al* 2013) noted that local government was one of the foremost casualties of austerity and that spending in real terms would be reduced by nearly 30 per cent between 2008 and 2015. Initial research suggested that councils now concentrate more on economic development at the expense of other functions such as culture, environment and planning. As the report notes, austerity 'appears to have provoked a renewed emphasis on developing and managing economic growth', not least to 'generate income which can be spent on service provision' (pp. 34-5). This has clear implications for climate change action, suggesting councils are more likely to focus on income generation and cost-cutting rather than more 'costly' mitigation approaches.

Through the Localism agenda the Coalition government has claimed to have devolved power back to the local level, although in reality to 'communities' rather than elected governments (Lowndes and Pratchett, 2012). Taken largely by the DCLG under Secretary of State Eric Pickles, initiatives have included moves to reduce red tape on local authorities, the abolition of the Audit Commission and of National Indicators, and changes to the planning system to establish a presumption in favour of development through the National Planning Policy Framework (NPPF) (DCLG 2012). The Localism Act (2011) enshrines communities' right to challenge local authorities over the provision of services, to bid for assets of community value, and to make Neighbourhood Plans which have some weight within the planning system. Local authorities are allowed greater powers to manage their own social housing financially. A challenge to a council service will trigger a tendering process where community and voluntary groups may bid to run council services, and commercial providers may also bid at that stage. In theory 'localism' ought to give local authorities greater flexibility to develop policies on climate change that are tailored to their specific conditions. However, as Lowndes and Pratchett note, the retreat from centralism 'may be as much the corollary of savage public spending cuts and the need to externalise responsibility for performance failure as the outcome of a principled commitment to more autonomous local governance' (2012, p. 38).

The interview material described below offers some interesting reflections on the localism approach. While many, and not only Conservative, councillors expressed agreement and appreciation for the

principle of greater local autonomy and the aims of the localism policy, the reduction in state interference and bureaucracy, they did not necessarily feel that they were enjoying this autonomy, and the new planning guidelines weakened their hand further in relation to developments which they regarded as unsustainable, including building on flood plains.

The new planning guidelines embodied in the 2012 National Planning Policy Framework (NPPF) establish a 'presumption in favour of sustainable development' (DCLG 2012 p i). While there is a definition of sustainable development in the Framework this is not give an operational form. Councillors described many cases where refusals of planning permission in rural areas had been overturned at appeal by reference to this presumption. One district councillor, asked by angry residents to oppose a particular development, shook his head ruefully and said '*We a'n't got the power we had a year ago*'. He felt he could not oppose it for fear of landing the council with a large bill in appeal expenses.

While there is increasing emphasis and rhetoric on local civil society playing its part in development, the largest restructuring of local government finance is taking place in a top down fashion. Some respondents, such as Rebecca, a councillor, were inclined to doubt whether central government really does want to devolve more decision-making to local level.

> *Well it* [the coalition government] *sort of says one thing and does another. I find it, you know, it's a bit like weekly refuse collections, which don't make sense in environmental terms. We've been working very hard to move away from weekly refuse collections, and then Mr Pickles comes along and tries to offer money to go backwards'*

Local authority finances were still being highly constrained by surcharges imposed on authorities which did not freeze their rates. Other initiatives have been brought in to increase freedom to use local revenue, for example allowing councils to purchase their revenue sources, such as business rates and where applicable, their housing stock with the right to use the revenue more flexibly. However there were constraints on how councils could use the proceeds of housing sales. Kenneth, a senior officer complained:

> *the rules which govern the way in which local authorities deliver new housing, would not be tolerated by the private sector. The private sector would not accept a situation where your cash flow, - sorry – the income assumptions for your planning –We can*

work out how much it's going to cost on an annual basis, we know how much it will cost to manage the stock and we can say, well, we got a surplus, and we want to use that surplus to pay for new dwellings. But the government places a whole range of controls on it, such that if you've got any aversion to risk, you wouldn't do it. ……
The conversation with the private sector goes along these lines: What do you want? …streamline the planning process, let's get rid of all the bureaucracy, let us get on and be able to build, and offer finance to the mortages. Right.

Kenneth contrasted this with the attitude towards local government, continuing:

OK, so basically you want government to get out of the way. Now the conversation with the local authority is:
We want to build houses. Ah. But we're only going to allow you 30% of what you may receive as a result of this right to buy. And you'll only be able to keep that money if you sign an agreement that says within two years of that receipt you will have spent it, and if you don't you pay a penalty charge of 4% on top of the loan, and the other 70% that you need to deliver the funding for that scheme has to be found from somewhere else. But you can't borrow from capital. You can only borrow from the Housing Revenue Account……..

The perception here was that the 'enabling' aspect of the Localism applies only to the private sector and not to local government. As council housing is one of the avenues through which local authorities seek to reduce or constrain emissions, the disabling of councils' house building has restricted this possibility.

The tone of the conversation with the private sector is all about simplifying and let's get the investment in. And when it comes to local authorities – very different! And the reality is, you need a combination of private and public sector to get you out of the housing problem, because we're not building enough houses.'

In some local authorities there is disappointment because the Localism Act has not allowed the sort of freedoms to decide things on a local basis that was anticipated. Arthur, a district councillor, commented

'You know, people are interpreting that as well I can stop windfarms, we can stop this, and we can do this that and the other, and it's not, you know we [can't]'. 'Government has misled people with the word localism. – an emphasis on something that doesn't really exist. People still have to go through all the consultations they went through before'.

Again, Rebecca, a city councillor, remarked:

There does seem to be an innate contradiction between the headline stuff that you see about localism, and letting people make their own decision at a local level, and actually, the centralization, there still is quite a lot of centralization. My officer

colleagues.. are going through the localism bill saying, on the one hand….it talks about the community On the other hand, there are things in there that are demanded of councils which are very, very far away from localism.

Rebecca explained that her council had not been able to make and implement the Masterplan for a new development area, ensuring adequate community facilities; having turned down an application which was not in accordance with the plan, they were taken to appeal by the developer, and the appeal was upheld.

Now our argument is that when you get piecemeal development like that, with little patches, you end up with something that looks like parts of [suburb X] which is the one I represent, which has virtually no community facilities, you know, it's grown, grown, grown, you have one very tiny shop, very tiny games area, there's no identifiable community centre, it's just grown like topsy, you know very often people don't want to live in that community.

In her view it was not communities who were empowered, but developers. There is sympathy for the aims of empowering communities and enabling local providers. However even supporters of the localism idea have come to regard this with some cynicism. Councillor Arthur, who is also a businessman whose self-chosen mission is to increase local employment, became quite vehement in describing the impact of the Localism Act.

Yes, there's a lot of stuff going through. I'm conservative, I'm not a particularly political animal, but some of the stuff that's coming out, is, its just tinkering around the edges, doesn't give any clear direction really……We're probably looking at localism with a small 'l' really because we can't really see that there's a lot in there that's really going to sort of – you know, the community right to buy or the community right to take over a service – It's going to waste a LOT of time really……. the refuse collecting and things like that…. it's the idea of localism, if a local company says we can do that, then of course policy says you've got to go out to competitive tender, then all the big boys are going to come in, so you're just going to defeat the object really, so - I mean a lot of stuff that we get coming down from government is getting just messy and complicated, and just getting people to spend HUNDREDS and THOUSANDS of hours, just going through this, it's just not tangible.

While there is much support for the general project of localism, this project means different things to different people, from enabling development to being able to restrict undesirable development more freely. From a planning point of view it has not contributed to localizing the production of goods and services, and the changes in the planning regime noted above have inhibited development management for reduced greenhouse emissions.

It would seem that many of the changes introduced under the banner of localism bypass or weaken local authorities, who would need to play a strong role in developing low carbon communities and economy. As things stand, the outcomes from local mitigation measures are national and global, and, unlike adaptation projects, will not primarily yield the advantages at local level which would propel action.

In a quite different approach, it has been argued that a localization of the economy – enabling it to draw to a much greater extent on local resources - would facilitate a reduction of emissions by promoting a more integrated local economic system and have the advantage of bringing control of some economic processes closer to those who engage in them (North 2010, 2012, Hopkins 2011, North and Barker 2011, Scott-Cato 2012). In Hopkins' vision and that of the Transition Town movement and the Post Carbon Institute, economic development could draw on a creative participatory process arising from the community. It would use techniques to encourage local production such as local currencies, and include more small scale farming and artisan manufacture, re-using waste products and producing for a local market. Often misunderstood as proposing a return to self-sufficiency (which it is not), this model envisages greatly reducing fossil fuel requirements for food growing, manufacture and transport, enhancing the low carbon economy and improving local resilience to shocks from both extreme weather and downturns in the national or global economy (Heinberg and Lepow 2010, Hopkins 2011, Scott-Cato 2012).

Thus, to recap, reducing the deficit, the urgency of promoting economic growth and the localism agenda have come to dominate policy under the Coalition government; the momentum on carbon reduction has not been maintained. Domestic UK emissions excluding aviation and shipping fell gradually until 2011 but rose 3.5% in 2012 (Hunt 2013), though this may be seen partly as determined by the level of economic activity. Although the cross-party consensus officially remained in place, it was significantly weakened by ambiguous signals and conflicting policy initiatives. For example, the government moved to cut the Feed In Tariff abruptly, throwing investment in renewable energy into disarray. After a judicial review a more gradual and predictable scaling down of the tariffs was introduced in step with the falling price of renewable technologies. In March 2012 the Government announced a new emissions performance standard that would allow the operation of gas-fired power stations without carbon capture until 2045. More positively, in a move to bolster

support for carbon saving innovation the government, accepting Dieter Helm's criticism of the ETS as a mechanism to bring decarbonization, introduced a 'floor price' for carbon. It was intended that this should rise gradually to around £70 per tonne emitted by 2030 in UK, but was frozen at £18 per tonne in March 2014, thus limiting its impact.

During 2012 and 2013 a faction gained strength within the Conservative Party which actively tried to undermine the commitments to carbon reduction made in the Climate Change Act. In September 2012 John Hayes, a known opponent of wind farms, was appointed Minister for Energy at the Department of Energy and Climate Change (DECC) from where he issued messages which contradicted positions outline by his boss, the Liberal Democratic Secretary for Climate Change, Ed Davey. A group of 100 Conservative MPs wrote to David Cameron seeking reduction in subsidies for onshore wind, which Hayes announced would become policy. Owen Patterson, a climate sceptic and also an opponent of wind power became Environment Secretary. Peter Lilley, a climate change denier, was elected onto the Climate Change Select Committee. In a secret filming by Greenpeace, Lilley said that he thought the Chancellor George Osborne had wanted to 'get people into key positions who could begin to get the government off the hook of the commitments it made very foolishly' (Greenpeace 2012). Lilley is a director of an oil company, Tethys. In July, a leaked letter from George Osborne to Ed Davey revealed that Osborne was worried that 'too much progress in the renewable markets would put off the investors needed to turn the UK into what Her Majesty's Treasury wanted to see emerge: a "gas hub"' (Leggett 2014).

It was recorded that in the course of the coalition Government, energy companies, lobbyists for the nuclear industry and energy-intensive sectors had met with Treasury officials seven times more often than green sector (Hickman 2012). The increasing responsiveness to the 'Big Six' and heavy energy users appeared to be reflected in the direction of policy, for example the omission of a decarbonization target in the Energy Bill in 2013, another blow to investment in renewable and low carbon businesses in the UK (Ashton 2013). Recent agreements to offer high guaranteed prices for nuclear electricity and to request only a contribution for toxic waste disposal fall into this pattern, and gives the lie to the earlier commitment not to subsidize nuclear power. One of the arguments for this is that nuclear energy is a low carbon energy source. Estimates of carbon emissions from the nuclear industry range from 6 per cent to about a third of those from fossil fuel generation of electricity. Disappointed renewable producers have argued that the same subsidies in their direction

would produce more power more quickly. Meanwhile there has been a resurgence of coal replacing gas in electricity generation (Hunt 2013), which partly explains the rise in carbon dioxide emissions from energy generation and supply and for residential uses in 2012 (See Table 2), when emissions from transport and business sectors rose less.

Recent policy developments include new tax breaks for shale gas and incentives to councils to accept drilling wells, provision in the Energy Bill for increases in gas generation from unabated gas power stations. The trend for increasing imports of coal has continued and some UK mines are being re-opened.

Table 2: Sources of carbon dioxide emissions, 1990-2012 (provisional) (Mt)

	1990	1995	2000	2005	2008	2009	2010	2011	2012 (p)
Energy Supply	241	210	203	216	213	190	195	182	192
Transport	120	120	125	129	125	121	119	117	116
Business	113	107	107	97	90	79	79	76	79
Residential	79	81	87	84	80	75	87	66	74
Other	39	36	31	27	23	17	18	17	18
Total	592	554	553	554	531	481	498	459	479

(p) 2012 estimates are provisional.
All figures are for the UK and Crown Dependencies only, and exclude Overseas Territories.

Source Hunt (2013) http://www.carbonbrief.org/blog/2013/03/uk-greenhouse-gas-emissions-rose-in-2012-decc.

Within the EU also, the UK government has resisted some moves which would hold back emissions, including further targets for renewables; the removal of a specific biofuels target (in light of forest destruction with which biofuel production is associated); and the fuel quality directive which would exclude oil from tar sands from the EU. Right wing rebel Conservative MEP's also helped to defeat the withholding of emissions permits from the ETS, a measure proposed by the European Commission to salvage it from the collapse of the carbon price as a result of over-plentiful permits during the recession.

3.4 The structure of local government in England and the South West

In the UK councils are made up of 'members' or councillors elected by the public, and 'officers' or staff who are employed by the council, work in their offices and who have their own line management led by the Chief Executive Officer. Since the Local Government Act of 2000 most councils in England and all of those in the study have chosen an indirectly elected leader and cabinet model. The Leader of Council is generally the elected leader of the party with the largest number of councillors, although in one council in the study the administration was formed from a coalition of minority parties and the leader elected from the largest of these. The Leader is the 'first among equals' and does not have the political clout of an elected mayor. 'Mayor' is the title given to a councillor who formally represents the council on ceremonial occasions and carries no special powers. Cabinet members are either chosen by the leader or elected from among party groups by councillors of that party. They hold specified portfolios, ie they are responsible for overseeing the delivery of particular services or holding particular roles within the administration. One or more committees for Oversight and Scrutiny are made up of non-executive councillors, and have the power to call executive members and officers to appear before them, and in some councils, also to commission independent reports and summon experts to advise them. For more in depth discussion of local government, see Stewart (2003), Stoker (2004) and Wilson and Game (2011).

A minority of councils in England have opted for a directly elected mayor, who appoints either a cabinet formed from elected councillors, or a city manager possibly with other officers to run the major services. The process of choosing an elected mayoral system involves holding a local referendum. In the South West, only Bristol, compelled to instigate such a referendum, has just decided to have an elected mayor. An innovative and wealthy non-party radical, the mayor of Bristol – George Ferguson - has attracted much support from those who opposed the mayoral system.

Some areas of the country, mostly the more rural areas, have a two-tier system of administration, with County Councils responsible for education (apart from academies and free schools), libraries, waste disposal, highways and transport, and the District Councils

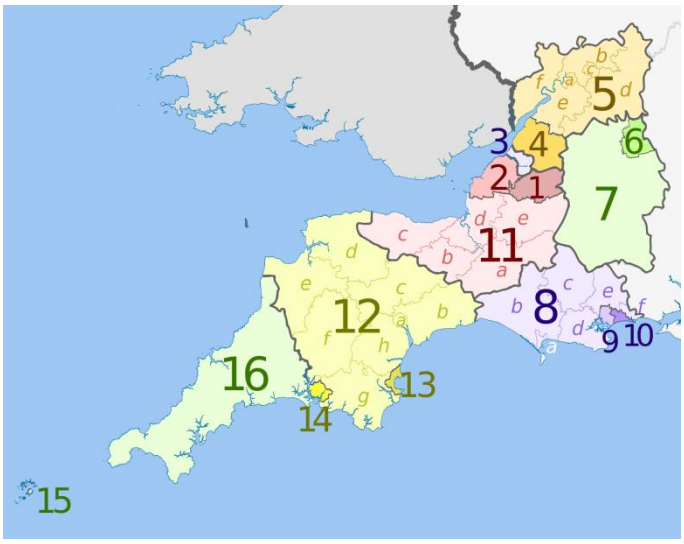
within the area responsible for local planning control, refuse collection, leisure facilities, car parks and in some cases the remaining council housing stock. Other, and mainly metropolitan areas, have a unitary administration with both sets of responsibilities and services. It should be noted however that many services are provided through other authorities, boards and trusts, such as the Police Authority, the Fire Service and Health Service Commissioning boards.

The former Regional tier of government, the Regional Development Agencies, was abolished by the Coalition government in 2010 with effect from March 2012. The Local Strategic partnerships created by the Labour Government to create and act upon a Community Plan through a Local Area Agreement, still exist and include representatives of business and the community and voluntary sector as well as service delivery partners. These now lack funding on the whole. Some of the functions of both of these bodies have been picked up by the Local Enterprise Partnerships (LEP), established by the Coalition government in 2011. These are voluntary alliances between local authorities and businesses, whose function is to generate private-sector led development in their areas and to lead economic growth and employment creation in 'natural economic areas'.

In the South West, Cornwall has a separate LEP from the 'Heart of the South West', covering Devon, Dorset, Somerset and Gloucestershire.

The South West has sixteen counties and unitary authorities, including the urban areas of Bristol, Bournemouth, Poole, Plymouth and Torbay. The four counties in two tier areas are Devon, Somerset, Dorset, and Gloucestershire, with 25 district authorities within these. Within these districts are Town and (rural) Parish Councils, which have a role in assessing planning applications and importuning the highways department over potholes, parking problems and the like, but which are mainly ignored by higher authorities, except for their services in distributing salt in case of snow.

Figure 14: Local authorities in the South West of England: Counties and Unitary Authorities



1. Bath and NE Somerset U.A.
2. North Somerset U.A.
3. Bristol U.A.
4. South Gloucestershire U.A.
5. Gloucestershire County
6. Swindon U.A.
7. Wiltshire U.A.
8. Dorset County
9. Poole U.A.
10. Bournemouth U.A.
11. Somerset County
12. Devon County
13. Torbay U.A.
14. Plymouth U.A.
15. Isles of Scilly U.A.
16. Cornwall U.A.

Source: By Dr Greg and Nilfanion. Contains Ordnance Survey data © Crown copyright and database right 2011, CC BY-SA 3.0, https://commons.wikimedia.org/w/index.php?curid=19300515

3.5 Decisions in local authorities

Decisions made by local authorities can originate in a number of ways. National policy affecting councils through legislation imposing statutory duties will necessitate the allocation of officer time and money to fulfilling such duties. Regulations often form the basis of briefings to elected members by officers on how they are being observed or what needs to be done to conform to them. Other policies may be promoted by incentives or by general injunctions to act.

It is in the latter circumstances that individuals have a more decisive role. In the case of policies promoted by incentives and injunctions, specific initiatives need to be proposed, either by an officer or an elected councillor, and will then form the basis of a plan of action or proposal written with the help of, or by an officer. The proposal is brought forward to a committee or councillor (usually the portfolio holder for that topic area), and one or other brings it to the executive, the cabinet, composed of all the portfolio holders. It may well also be examined by a scrutiny committee; however decisions are normally made by the cabinet or executive, and rarely go to the full council.

Thus councillors or 'members' play a role in councils' decisions in three ways. They can propose initiatives independently and seek support of other councillors; they also act as part of a party group to see initiatives through to acceptance by the full Council, which staff or 'officers' will then be asked to deliver; and they may act by virtue of a specific role in which are invested certain powers, such as the holder of the portfolio for waste and recycling services, or 'regeneration', or a member of a scrutiny committee which has the power to question and call for answers to enquiries to hold other councillors and officers to account.

Officers are supposed to do the bidding of councillors, suggesting ways and means to achieve politically determined ends; but they often hold a good deal more power than this would suggest. Like civil servants at national level, they may be career professionals and often have a longevity in the organization which greatly exceeds that of their political masters. (This may be related to their aversion to risk discussed in Chapter 5). They hold a great deal of technical knowledge and familiarity with relevant law and regulations. The senior officers have all the techniques available to a Sir Humphrey to obscure or evade matters with which they do not wish to deal; however sometimes it is the officers who wish to get things done but conditions on the political side are not propitious.

What is clear is that decision-making characteristically reflects both agreement from councillors and input from officers; and that any proposal has to surmount a number of hurdles to progress to implementation. In this study it was found that in some councils most initiatives come from the members; for example where a party group has a clear sense of political direction. In others more initiatives come from officers, who will suggest measures to their relevant portfolio holder. Co-operation between portfolio holders and their respective department heads is vital to the achievement of the goals of either.

Thus decision-making in local government is diffuse. Proposals can originate from any individual; if from a less significant player they will depend upon support higher up. A decision involving matters of political principle or large expenditure will require support at least from the leader and cabinet as well as action on the part of officers.

In the case of planning decisions, the council responds to applications from members of the public within a framework which is determined in advance. Local structure plans are worked out in periods

of years, involving cycles of proposals and consultations involving developers, public agencies (Environment Agency), nongovernmental organizations (Wildlife trusts etc), businesses and planning and highways authorities. Planning applications are then assessed in relation to the spatial and policy priorities outlined there, initially by planning officers who take many decisions unaided, or by a planning committee of councillors, which assesses larger applications or, responding to public or other concerns, can "call in" decisions on any application to the planning committee. Planners are of course constrained in their decisions by national policy, most recently the National Planning Policy Framework, of which more later.

3.6 The role of local authorities in policy on climate change

The approach of New Labour to climate change policy included a variety of measures both to incentivize and require local authorities to act. They were required to monitor their greenhouse emissions and to report on actions taken to reduce carbon. The Carbon Trust was financed to undertake carbon management plans with local authorities and some funds were allocated under these programmes. The approach taken by the Coalition government to mitigation policy is essentially voluntaristic. This change is illustrated by Box 1 (DECC website 2012).

Box 1: How Government is empowering local government to take action on climate change

Many local authorities are enthusiastic about playing their part in meeting our carbon mitigation targets and have already set in place stretching ambitions and policies for reducing emissions in their area – and are making a difference.

As part of the Government's localism drive, we want authorities to be enabled to do much more and to set the agenda. Government should not get in the way.

In 2010-11 the Government ran a pilot programme with nine local authority areas to co-design a series of Local Carbon Frameworks to identify what works at what spatial level and to develop templates for action on carbon by all local authorities. See the Energy Saving Trust: evaluation of the Local Carbon Framework pilots[External link] web page for details.

The resulting lessons from the programme provide a practical basis for the development of the Local Government Association's Council Framework for Climate Change. This Framework seeks to act as a local action plan on delivering reductions in carbon emissions, encapsulating the varying portfolios of carbon reduction measures relevant to individual or grouped councils.

Councils are encouraged to view the published outputs below and contact direct any of the projects that are of particular interest. In addition, the successor to the Nottingham Declaration - 'Climate Local' will be building on the portfolio of work generated by the Local Carbon Framework programme.

From DECC website
http://www.decc.gov.uk/en/content/cms/tackling/saving_energy/what_doing/local_councils/carbon_frames/carbon_frames.aspx viewed 31.10.12

The website (since altered) adopted the rhetoric of releasing authorities from constraints so that they could do more. 'Many local authorities are enthusiastic about playing their part in meeting our carbon mitigation targets… As part of the Government's localism drive, we want authorities to be enabled to do much more and to set the agenda. Government should not get in the way'.

The Low Carbon Framework pilot projects mentioned above were introduced by the Labour government in 2009 as a testbed for a framework within which all local authorities would be required to propose and carry out carbon reduction projects.

3.6.1 Carbon Reduction Initiatives

A number of reports suggest that the voluntary approach to carbon reduction has not demonstrated the potential needed to bring about major changes in carbon intensity. For example the Green Alliance report 'Is localism delivering for climate change?' showed that though approximately a third of councils continued with efforts to mitigate climate change, 37% of local authorities had deprioritized climate change or stated that it had never been a priority, and 28% were narrowing their ambitions to reducing their own energy bills (Green Alliance 2011). As one officer commented, 'when the coalition axed the list of indicators, and axed the Audit Commission, interest in this went Voom! You could almost see it falling out the window''.

The officer's comment on the events of this period highlighted the limbo in which those tasked with carbon reduction were left. After the elections

> *…they advised us to put everything on hold, which was incredibly difficult to do.. to put the dampers on everything, after four months – and we were building up to World Environment Day*

But further changes in policy were projected, before the conclusion of the national pilot projects which were testing different approaches:

> *they then decided that they were going to introduce Local Carbon Frameworks for the new financial year 2011. And everyone went, well hang on a minute, because you won't know the outcome of the national pilot project. 'Oh, Right. Okay,' And then, I think it was November…autumn 2011, all of a sudden, Greg Barker announces that this legal requirement isn't going to happen. There isn't going to be anything in law to persuade local authorities to tackle climate change and meet targets… And that there wouldn't be a requirement for Low Carbon Frameworks. [So] nearly all the organizations involved in them, all the pilots, all the local authorities that were switched on to this went, hang on a minute! What do you mean, no?*

The government then commissioned the Climate Change Committee to research potential contributions to carbon reduction from local authorities. The Committee reported in May 2012, observing that councils would have little incentive to engage in carbon reduction unless incentives or regulation was strengthened (CCC 2012b). The report was not followed by any decisive action at the national level. Meanwhile, in a sobering comment, Price Waterhouse Cooper estimated that 'Even doubling our current rate of decarbonisation, would still lead to emissions consistent with 6 degrees of warming by the end of the century. To give ourselves a more than 50% chance of avoiding 2 degrees will require a six-fold improvement in our rate of decarbonisation' (PWC 2012 p9)

These findings to some extent echo the complaints of business about lack of stability in government policy towards green business. The CBI report 'The Colour of Growth' states:

> Of equal concern is the string of sudden and unexpected policy changes that have taken place over the past two years, including the increase in the North Sea oil and gas tax, the removal of revenue recycling from the Carbon Reduction Commitment (CRC) and the cut to the solar photovoltaic feed-in tariff. These have been damaging to business confidence, with implications not just for immediate investment decisions but for longer-term trust in government policy. (CBI 2010, p. 15)

The frame of thought regarding climate mitigation in local government cannot but be affected by perceived lack of commitment in central government. One officer noted that there is

> *this strange left hand right hand feel about this government … they have these conferences, and they talk big talk, but actually when it comes to doing stuff, I'm not getting the feeling that they're actually committing funding, committing doing. They've actually – you know, the solar panel fiasco, the FIT system, and they've been found wrong, and yet they're going to appeal that again.*

This officer was referring to the sudden decision to reduce the Feed In Tariff, a subsidy to microgenerators of renewable energy. The decision was challenged in court by Greenpeace, after which a more gradual reduction was established, staged in response to specified declines in the costs of relevant technologies.

3.6.2 Energy demand, 'green levies' and the Green Deal

The 'flagship' of the Coalition's approach to climate change has been the Green Deal. This relates directly to one of the primary responsibilities of local authorities which is to promote household energy efficiency, which they have performed with the aid of various grants and subsidies for loft and cavity wall insulation and new efficient boilers, aid which has been channeled through and promoted through councils. From 2012 onwards many of these incentives were withdrawn and replaced by the Green Deal measures, officially launched in January 2013 (BBC News 2013). Loan finance was advanced to households through any Green Deal provider for a series of efficiency measures, to be repaid out of savings on energy bills. The repayment was to be accomplished by a charge on the

household, which is transferred to the new occupant if the house is sold. Most Green Deal providers are private companies, but Councils have been encouraged to get involved as well.

In the first year about 100,000 assessments were carried out but only 1,500 households signed a Green Deal plan and only 500 carried out energy saving measures using the finance (UK Green Building Council 2014). This report suggests that the slow response to the scheme is due to a number of factors: the complexity of the scheme; the cost of the initial assessment (£150 or more); reluctance to take on a loan; or worries about sale price of houses so encumbered; the risk of energy bills not reducing, due to price rises, efficiency measures not performing as expected, and the rebound effect (people may just keep their house warmer without commensurably reducing their energy input). Additional factors may include the interest rate on loans which, at 6.92% (government estimate) to 8% (overall payment on £5,000 over 10 years), is higher than many other household loan options (BBC News 2013) but which the Building Council report defends. One councillor in our study thought that cost would be a barrier, remarking that there are *' a lot of poorer people that won't take it up – the ones you really want to get to, because a lot of the people that could afford the insulation can probably borrow money in a different way. So without direct grant funding to actually tackle the problem*…'

A fund of £46 million was released in 2013 to support councils' work with the Green Deal and on household energy efficiency invulnerable households, focusing on reduction of fuel poverty (DECC 2013c). The impact of this fairly modest amount has yet to be seen, and councils have expressed reservations about the degree of risk they might shoulder should they become Green Deal providers.

The suite of policies known as 'green levies' has also recently become controversial. DECC set out its justification for green levies – the energy companies' obligation (ECO), Feed in Tariffs (FIT), Renewable Obligation for generating companies etc - in an infographic (DECC 2013b, see figure 15). Other measures are obligations placed on energy companies rather than subsidies from the government but they raise the price of electricity in the short term. They were designed to reduce household bills in the longer term as renewable generation costs decline with economies of scale and technical progress, and households demand is cut by effective insulation and other efficiency measures. Green levies in 2013 accounted for about 9 per cent of energy bills but were expected to result in lower energy bills by 2020 (DECC 2013b)

Fig 15: The impact of 'green levies' on household electricity bills

Source : DECC, reproduced at http://www.parityprojects.com/green-levies/
Open Government Licence http://www.nationalarchives.gov.uk/doc/open-government-licence/version/3/

One of these policies, the 'ECO' programme, obliges energy companies to finance home energy efficiency improvements for the most vulnerable, and has been applied in some local authority housing. In 2013, this and other 'green levies' were blamed for raising energy prices. ECO 's carbon target was cut by 33% and the scheme extended pro rata for another two years. The main victims were energy efficiency installations in social housing, and solid wall installations tumbled; many planned schemes were cancelled at short notice leaving installers out of pocket, and leaving some vulnerable tenants without reduction in their bills, although it is hoped that some of these projects

will be postponed rather than cancelled (Parity 2014). The corresponding achievement was to reduce average energy bills for households by £50 in the short term.

3.7 Conclusion: Options for local authority action

This chapter has outlined the development of central government policy on climate change as it affects local authorities, as a background to the study described in subsequent chapters. In recent years central government has not sustained an earlier impetus to encourage and place responsibilities upon councils to bring about emissions reductions in their geographic areas, and the impact on authorities' own estate emissions is not clear. In the earlier period reflected in our interviews, there were both reporting requirements and financial incentives for carbon reduction initiatives and investment. Many Councils made carbon reduction strategies and plans to reduce their own emissions working with the Carbon Trust. Councils were also encouraged to promote carbon reduction in their areas, eg by providing information and encouragement to households and businesses to adopt energy and emissions saving measures, dispensing funds to households to improve their energy efficiency and investing in sustainable transport options. Direct finance for household and council emissions reduction investment is now scarce or absent, though low interest loans can still be accessed for invest-to-save projects reducing energy consumption and emissions from councils' own estates. Overall funding for local authorities has been greatly reduced, so the options for action have narrowed. The policy environment for investment in low carbon developments has been characterized by hesitancy and sudden changes of direction. In Chapter 4 I will examine in the interview findings, and particularly in the case studies, what the local responses have been to these policy approaches.

It is also interesting to observe how, although there are universal themes emerging, there remain significant differences in the approach of different councils. These are explored in Chapters 4 and 5, by comparing different authorities and by investigating local internal and external influences on the authorities' policy process and practice.

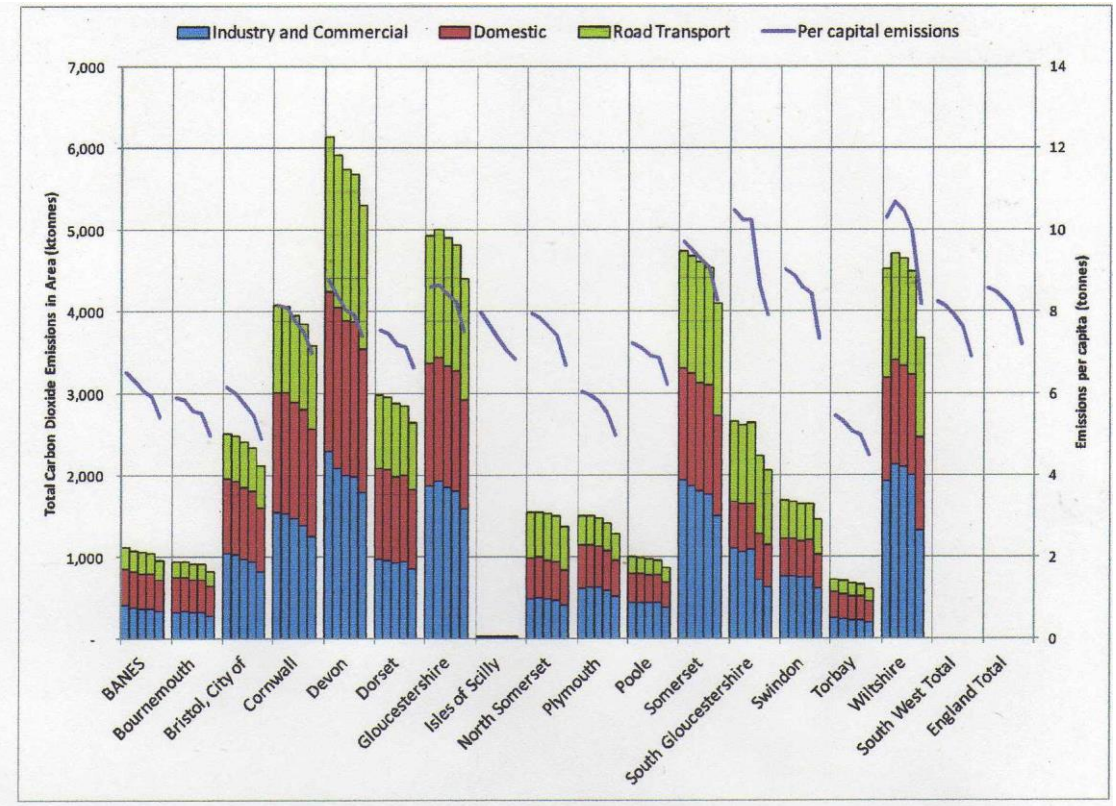
Chapter 4: Carbon Reduction and Local Authorities in the South West – Priorities and Outcomes

In this chapter I use data from documentary research and interviews to report policies on carbon reduction and actual achievements in the South West and in the seven authorities studied. This includes information respondents gave about the priorities in their authority overall, and about monitoring and measuring. Further detail on the measures undertaken is given for two case study areas and a comparison is made between these. Observations on carbon reduction activities in other districts are used to add to this picture, and to try to identify actions which, though desirable, were not undertaken, for financial, or subjective, or other reasons. This is essential background for the following chapter on the role of subjective influences. I then discuss the importance of certain internal objective factors such as the availability of personnel and technical expertise. I also use the interview data from all districts to comment on the weakening role of planning authorities in promoting low carbon development and on financial constraints. Finally I summarize information about other external contextual influences including party political allegiance and public sentiment.

4.1 Carbon Reduction Outcomes

Up until 2009 (the last year for which figures are available) greenhouse emissions in the South West area had fallen, in line with national trends, slowly but accelerating in 2008-9 probably due to recession (Lash 2011). The trends for counties are shown in Figure 16. These statistics depend on data from the utility companies, which is released only for these large geographic areas and with considerable delay. More recent data and for district level would assist local authorities in their efforts to reduce local emissions, were they ever to find themselves in a position to take more responsibility for this as envisaged in the Labour government's plans (DECC 2010).

Figure 16 Total emissions in the South West by County and Unitary Authorities from 2005-2008



igure 1: Total emissions in the South West broken down by Local Authority from 2005-2008. Total per capita emissions are al shown (purple line) for the South West districts, and for England.

Source: Lash (2011) *Carbon Reduction in the South West*, Internal Paper, Centre for Energy and the Environment, University of Exeter, after DECC. *Reproduced with permission from Daniel Lash.*

The levels of overall emissions reflect many processes including the price of energy and fuel and the economic crisis, and it is uncertain how far local authorities' actions have contributed to the reductions; however local authorities have in many cases supported measures to improve home energy efficiency and in a few cases have worked with businesses to support their cost-saving on energy. The data in Figure 16 is the most recent available, unfortunately; it would be interesting to see how far greenhouse emissions in South West authorities have rebounded as the economy improves, as the national figures shown in Chapter 3 indicate.

Councils have also been taking measures to reduce their own emissions. Most of those authorities for which data could be unearthed have succeeded in reducing their own emissions of greenhouse gases. Many projects and much officer time has been devoted to the carbon reduction agenda (reducing greenhouse emissions, mainly carbon dioxide, through energy efficiency and renewable generation projects such as those described below) and this has borne results. However some authorities are uncertain about the direction of change due to alterations in recording procedures as explained below. No systematic and comparable data across individual authorities could be found.

4.2. Priorities

In the interview respondents were asked about their current priorities in terms of time and urgency. Some of the answers were:

- [Instantly] '*Potholes'* – Councillor, rural
- *'The services we give..Most people… when it affects them, they revert back to the street cleaning and the dustbins, and what affects them on a very daily basis.'* - councillor, Weirbridge
- *'Keeping up pace with all the legislation coming through, about health and welfare, and localism, and things like regional pay'* – councillor, Greenleigh
- *'To look at the economy and jobs'* – councillor, rural

In some councils action on climate change mitigation had never been a priority, even where relevant policies were in place. In this study such councils were rural, or mainly rural. This was certainly the case in one authority where Spencer, an Environmental Health officer, said

> *the whole desire to reduce the carbon footprint and tackle climate change – was never really part of the culture. Senior councillors and senior officers agreed, 'well, yea, saving the environment is a good idea but there's not much urgency about it.*

And in many interviews in both rural and urban areas, the first priority mentioned was finance:

> *The trouble in the last couple of years, 18 months certainly, is the budget debate's just dominated everything. Not a week goes by without having to make decisions that you wouldn't normally have made…Our budget is shrinking from fourteen million down to nine and a half.* – Morris, councillor.

With average cuts to the budget of 27 per cent in five years across the UK, carbon reduction is far from being a priority. Policy commitment varies greatly between authorities. Policy on sustainable development is invariably found on websites and frequently figures among the overall priorities or objectives listed there, and reduction of carbon emissions is generally explicitly mentioned. Many councils in the South West had selected National Indicators NI185 (greenhouse emissions from councils' own operations) and NI186 (emissions from the council's geographical area) as part of their performance monitoring regime, including some of the smallest and most rural in the study; this had tended to promote the collection of relevant data (a substantial undertaking in a large authority) and significant attention to the issue.

> *And there was a huge amount of stuff coming from central government not long ago. But now you say it, or now you prompt me to think about it, with the change of government, that just dried up. Just stopped.* – Alison, Officer, Weirbridge

> *When the Coalition axed the list of indicators, and axed the Audit Commission, interest in this went Voom! You could almost see it falling out the window* – Janet, officer, urban.

The removal of these reporting requirements and the imposition of cuts has meant that reducing emissions has come much lower down the agenda in recent years. Only those large urban and county councils who come within the scope of the Carbon Reduction Commitment (CRC) - those consuming more than 6,000 Megawatt hours per annum - still have a requirement to report on emissions and to pay a charge per tonne of greenhouse gas emitted (currently £12 per tonne). In the South West, some of the County and Unitary councils reach this level but none of the districts.

High on the agenda of most councils, and compellingly so in those towns and rural areas reliant on farming and tourism, is the promotion of growth in jobs and income. Incomers to the area have caused house prices in many rural and coastal areas to rise beyond the reach of many residents, and thus affordable housing is also a prominent concern.

4.3 Monitoring and Measuring

As the reporting requirements for greenhouse emissions were relaxed, greater diversity appeared in what councils were measuring in order to monitor their progress. When I asked respondents whether their council measured its carbon emissions, the response was usually something like 'Well, it must do. I'm not sure who is responsible for that – you could try asking so and so'. Most respondents did not know whether the carbon emissions of their authority were going up or down. This situation was complicated by changes in the kind of measures which have been required by central government over the last few years. The current reporting guidelines for council emissions require information separately on Scope 1 (direct energy use, electricity, gas etc) Scope 2 (emissions resulting from travel and waste collection – mostly use of liquid fuels), and Scope 3 (indirect emissions resulting from procurement, including materials, equipment, food etc). Richard, an estates manager, responded to the question about measurement as follows:

> *R: (energetically) And they keep changing the way we measure them, its cos, like you're trying to compare apples and pears, …. our mission this year is based on this indicator, but we've got nothing to base it on. N185 is the one we have been using, the last two years, which is why I can identify an 8% reduction, they're now saying they're going to get rid of it and they're going across to this totally different one. Which probably won't be comparable to the ones we've been collecting the last two years. And that is a problem looking back, because you can never actually – what are you looking back at? (laughs, exasperated)*

An officer with responsibility for energy and climate change policy, Jeremy, interviewed near the beginning of the study, explained the difficulties of discovering what the council's footprint was. It depended on installing automatic meters (covering 80% emissions for the CRC).

> *we've got to working with schools but there's a particular problem there, in that they believe they're independent and they don't want to play….. We've still got about 100 schools outstanding – just can't be asked.*

Another officer spoke of the difficulty of discovering the location of the meters for which they were paying bills. However, he was able to report that for the first time they had a baseline figure for the council's own emissions in 2010/11. In other councils the measurement and reporting of emissions had lapsed when this was no longer required although data on energy use from the council estate were collected. When I asked Alison, an officer, if she could help me understand different figures produced for greenhouse emissions from Weirbridge Council, she said

Yea, yea, no, well, unfortunately, everybody who might have helped you understand that has probably been made redundant now.

Currently, reporting is again required according to a standard format and website research revealed greenhouse emissions reports for many councils; most have two to four years' record. All report falling greenhouse emissions (with a slight rise in 2012/13 which had a long winter). But a decline is to be expected since expenditure and activity is being cut. For example one authority's greenhouse emissions fell by 21% in one year, which included the removal of a considerable number of academy schools from their spending and emissions data.

To try to counter this, some authorities record greenhouse emissions per employee, some per amount spent, and at least one per head of population. Trends in these measures are less clear. One county authority has clear declines in emissions per £million spent, but the emissions from contracted out services is only beginning to be estimated and dwarfs direct council activity.

Information on the estimated emissions for each geographic area is derived from energy supply companies' billing data and is released only at a high level of aggregation. It is not available at district level and therefore most authorities cannot obtain it, though Plymouth could access city level data. All in all, two officers were able to provide information on the latest data for their council's energy use. Two more were able to say whether it was going up or down. None of the councillors appeared to carry this information in their heads. In one authority (Weirbridge), although the data on emissions was collected, trends were not easy to identify as the latest available figures (for an earlier year) were in a different format from those of the previous year.

4.4 Achievements in case study areas

The interviews and documentary studies were made in seven local authority areas. A more in depth study was made of two authorities, one in an urban area (Weirbridge) and one in a rural area (Greenleigh). There are contrasting challenges and pressures in these two areas arising from differences in size, geography and political circumstances. A brief description

will highlight the context and strategies of the two councils. Neither are unitary authorities; education, waste disposal, highways and transport are among the functions managed at County level.

Weirbridge stands at the lowest crossing point of the river, where the remains of an ancient bridge can be seen. It has some attractive ancient buildings and medieval churches. It has long been a retail and administrative centre, and today major sources of employment are in civic authorities, health and social services, retail and service businesses, and the education sector. The town contains higher and further education establishments, a number of private and language schools. The current Labour administration in Weirbridge inherits a policy conversation concerning climate change developed from 2006 onwards and the council has engaged seriously with carbon reduction in its own operations and elsewhere at least since that time.

Greenleigh, on the other hand, is a rural area whose authority has in the past been beset by financial management rather than policy issues. The land forms a plateau into which rivers have carved valleys with some steep wooded slopes, topped by gently rolling fields which offer advantageous sites for wind turbines. The population is small and scattered. The largest town, Oldford, sits on the banks of the river Rudge, as it broadens into its estuary. One senses its past as a fishing port and boat-building town, the more since there is little industry to replace the disappearance of these occupations. The town centre has a seedy feel to it; there is an attractive covered market in a cobbled square, and some well-stocked antique shops. Along the quay and up the steeply sloping town centre are mainly Victorian buildings, some 18th century, with older public houses. Greenleigh Council occupies the elaborate stone Town Hall on the Quay, '*old fashioned built, big stone y'know, get's hot as hell in the summer, cold as a frog in the winter*', two other buildings, also difficult to heat, and an unpretentious two storey modern office looking out across the river.

Table 3 summarizes the various initiatives which have been taken in the two case study authorities over the last 5 or 6 years, and the outcome. It shows that efforts to mitigate greenhouse emissions in Weirbridge go back to 2006 at least, and that the intention has been to do this systematically, by working with the Carbon Trust, signing up to a Carbon Management Plan, and formulating a Climate Change Strategy. It was willing to experiment

with renewable energy generation on its own premises relatively early on with the choice of a biomass boiler in one building, as well as the decision to put rather unsuitable wind turbines on the civic centre. Attention was also given to sustainable procurement and to promoting sustainable travel through partnership with other agencies and a grant to improve cycling.

Table 3: Achievements and recent changes in case study authorities: Summary

	Weirbridge (urban area)	Greenleigh (rural area)
Achievements	• Signed up to Carbon Trust Management Plan including energy efficiency measures • Climate change strategy • Active energy management on own estate • Encourages cycling & park & ride services • Explored renewable generation – experiment with biomass boiler, small wind turbines. • Sustainable procurement • Insulated council houses, PV on some • Energy project in schools • District heating schemes • Carbon-saving advice to businesses	• Turned spotlights off at civic centre. • Prize-winning eco-workshops built for letting to small firms • Now has PV on Civic Centre. • Adopted 10:10 campaign • Cutting energy bills where possible. Energy management on own estate. • Fleet changed to more energy efficient cars • More efficient recycling vehicles • 'Invest to save' only – short payback • Introducing voltage optimizers, energy-efficient IT, reduced flexitime. • Emissions fell 13% 2008/9 – 2010/11 then rebounded somewhat in 2011/12
Recent changes	• Emissions fell approx 10% 2010/11-11/12 and again to 2012/13 • Environmental co-ordinator post frozen • 'Climate change' parking levy diverted from carbon reduction to general pot. • Capital budget depends on new development • Continues 'cycling city' • Continues partnership with developers and energy company to provide district	• Opposition to wind turbines stronger than ever. • Beliefs about climate change strongly contested • Council has lost large amounts from turning down wind turbine applications (against officer recommendation) • Council finance and provision of economic development ('regeneration') are, more than ever, urgent priorities.

	heating schemes • PV on Civic Centre • Unable to profit from PV on council housing	

A fuller description of initiatives taken, their origin and what became of them is given in Table 4 below. No doubt there were more, but these were the ones which were described to me in interviews or identified in documents.

Analysis of the initiatives and outcomes recorded in these tables reveals that respondents from both case study councils could point to certain 'flagship' projects which highlighted their concern for the environment and for a low carbon economy, such as a new eco-building project, or microgeneration from the Civic Centre. Both councils now have solar PV panels on their Civic Centres, an uncontentious decision in the light of the financial benefits at the time. Systematic processes were also in place, though with varying degrees of aspiration. Greenleigh achieved a reduction in greenhouse emissions using the old National Indicator (NI185) measures of around 9% between 2008/9 and 2011/12, and Weirbridge a reduction of 9% by these measures between 2010/11 and 2011/12; it went on to make a reduction according to the new measures of just under 11% between 2011/12 and 2012/13 whereas in Greenleigh emissions rebounded somewhat.

Thus both the rural and the urban authority had made considerable efforts to reduce the emissions from their estate. In both, greenhouse emissions had reduced and in both large staff reductions during the period probably explained much of this change. However in Greenleigh the carbon emissions per full time employee fell in the first year of record, from 2008/9 to 9/10, indicative of at least some efficiency savings. After that it rose (as one would expect with staff losses) but did not regain its former levels. In Weirbridge, not only did carbon emissions fall by nearly 20% after 2009/10 but emissions per full time employee also fell slightly in both periods of measurement. Therefore in both authorities emissions reduction was due to reductions in energy use from conventional fuel sources as well as to staff reductions, but in Greenleigh was not maintained.

However the larger urban authority probably had more scope for carbon reduction: the GHG emissions per full time employee equivalent were several times higher in Weirbridge (nearly 7 tonnes at the start and end of the period though measures were different) than in the small Greenleigh authority, (about 1.6 tonnes, falling to 1.5).

Table 4: Initiatives and their Outcomes in Case Study Districts

A: Greenleigh

Initiator	Initiative	Process outcome	Policy outcome	Physical outcome
	Green Travel Plan		Adopted 2006, reviewed at intervals since	Most employees still travel by car but fleet has lower emissions
Sustainability officer (pt)	To persuade council to develop a strategy for carbon reduction and promotion of renewable generation	Senior officers and councillors were able to ensure that this was mostly ignored. Training day was organized for planners on renewable energy	Some policies formulated but not implemented. Eg requirement for proportion of energy to be renewably generated in larger developments	Uncertain. May have contributed to planners asking for improved eco-specifications in certain developments and building prizewinning eco-workshops
Sustainability and Health officer	Number of innovative projects concerned with health, good food in schools and communities, real nappies etc	Some funding obtained for 'bits and pieces' through persuasion of senior officers about programme relevance. Repeated RE training day for planners	Elements concerned with sustainability included in many areas of the council's work , including emergency planning	Awareness raised in project participants and sustained over some years. Schools use more local food. Awareness of flood risk.
Environmental appraisal officer	To install solar PV panels on civic buildings	Initiative disallowed until FIT enhanced business case		PV installation reduced energy bills and saves some tonnes carbon per year
Energy manager	Install updated IT equipment; voltage optimizers	All progressed as with other cost-saving changes		Reduction in energy usage by council offices.
Green councillor	Asked council to sign up to 10:10 campaign, promoting carbon reduction of	Sign up backed by Leader and approved by council. Estates manager reads small print and finds organizations required	Signed up to 10:10	Unclear if this made any difference

	10% a year	to reduce carbon by min.3% p.a. no advance on existing plans.		
Green councillor	Prompting implementation of planning policy guidance regarding renewable energy generation in developments	Questions and points made in planning committee	Increased readiness of planning officers to ask for energy-saving features and microgeneration in some small as well as large developments	New developments constructed for greater energy efficiency and lower carbon emissions.

Table 4B: Weirbridge

Initiator	Initiative	Process outcome	Policy outcome	Physical/Overall outcome
Officer strategic management team	Carbon Management Plan 2008	Working group set up Work with Carbon Trust to develop a management and implementation plan Measurement regime established	Target to reduce emissions by 10% from 2006/7 by 2009/10 and 20% by 2012/13	Environmental Champions within Council. Voltage optimizers installed. Lighting and other energy-saving projects. Installation of biomass boiler. Trial biodiesel fuel in Recycling vehicles.
Party leadership group	Car parking levy	Raised £90,000 for projects: Insulation grants Smart meter project (with Transition group) Heat loss survey Retailers scheme Renewable energy survey		Home insulation provided free to low income residents Smart meters taken to 8 schools for borrowing, av household savings 15% energy use. Heat loss map of Exeter. Report on RE potential.
Officers	Retail energy efficiency award scheme; Carbon club re business energy	Some initial contacts and surveys were carried out but the schemes were not carried through.		Some potential savings for retailers were identified but follow-up was unable to identify adequate data for actions taken.

	efficiency			
Environment co-ordinator and others	Evolving a Climate Change strategy	Analysis by University of Weirbridge.	Climate Change Strategy adopted 2008 with target to reduce area emissions 30% from 1990 by 2020. Commitments to reducing emissions from housing, commercial and public sector buildings & transport.	County emissions have fallen, though with economic resurgence are again rising.
	Planning policy for low carbon development		New housing to be rated BREAM3 by 2009, BREAM4 by April 2010. Not implemented, then vetoed by central govt.	New housing in "low carbon development" is rated BREAM 3
Officers	Travelsmart individualized travel advice programme	Project team identified partners and funding sources		Programme implemented on house-to-house basis. Cycling and bus use increase (partly due to Cycle programme running concurrently)
Director for Environment and Community	Providing information about climate change to council staff and councillors	Showing of the Inconvenient Truth; also circulating information about climate change to councillors; identifying training days on climate impact etc.	Improved background knowledge of councillors and acceptance of validity of council action	-
Councillor	Wind turbines on Civic Centre	Design specification reduced after complaints from airport	Negative	Turbines installed; rather small amounts of electricity produced. Eventually removed.
Councillors/ officers	Low Carbon Task Force, To promote low carbon development	Involved partnership with Eon, neighbouring district, and County Council. Developed projects submitted for approval, see below	Capital requirements for low carbon development sought from private sector to augment scarce	District heating schemes in preparation – see below – and 'low carbon' communities outside city boundaries.

			Council resources	
Low Carbon Task force	PV installations on council houses	Through LCTF(above) with Eon as provider	-	PV installed on over 100 council properties. Tenants have reduced electricity bills. Eon receives FIT. Reduction in council's footprint.
Low Carbon Task Force	Work with private landlords to encourage energy saving in their properties			
Director, and LCTF	District heating scheme running from town centre out to new estate	Allocation of S106 moneys towards large capital cost of scheme. Partnership with Eon takes scheme on.	Commitment to raise further finance from 106 or Community Infrastructure Levy to complete the scheme.	Pipework currently being laid. Project will be fuelled by gas, though in theory could transfer to biomass later. Will reduce heating costs for new houses and commercial properties involved and reduced emissions .
Officer	To build Council houses to passivhaus standard		All new build council housing to be to this standard	First two passivhaus developments v. popular with tenants. Achieves downsizing to release family housing.
Councillor, Portfolio Environmental Health	Waste reduction measures	All party working group set up to assess possibilities.	Extending collection of landfill waste every other week to 90% households.	Reduction in waste collected for landfill and increased recycling rates.
Officer	Investigate more sustainable procurement	Set up Green Accord scheme which is now being marketed to other councils and private and public sector organizations eg Met Office		Green Accord scheme implemented, evaluating suppliers environmental impact.
Officers	Support City Council proposal for High Quality	Bids for funding to Regional Funding Allocation		HQPT shelved due to lack of funds

	Transport Routes			

4.5 Differences in achievements between authorities

Table 4 indicates that Weirbridge had adopted a systematic approach to reducing emissions from its estate, involving a team of senior officers and leadership from members. A Carbon Management Plan was developed with support from the Carbon Trust, and included in the Climate Change Strategy, adopted in 2008. This was reviewed and a further Action Plan adopted in 2009. Subsequently the environmental co-ordinator left and was not replaced and from 2010 on the authority, like many others, became preoccupied with reorganization and staffing cuts. There was no sign of further monitoring and reporting of the progress of this strategy after that.

Earlier, the council had taken some risks. A Labour/Liberal Democrat administration had experimented with a biomass boiler in one of its premises, and put wind turbines on the roof of the Civic Centre (predictably ineffective). It introduced a levy on car parking which was allocated to energy efficiency projects both in the council and in the community, notably the lending of smart meters to households through schools, so that they could for a short period observe how their behavior affected their electricity consumption.

Although priorities have changed and the Strategy is not mentioned much these days, some of the processes set up in the earlier period, 2006-9 are continuing. There is a Low Carbon Task Force involving a partnership with a large energy provider and a neighbouring authority into which much of the urban housing development has spilled. Such partnerships are often nowadays the only way to secure capital investment in energy-saving measures. The development of a district heating scheme, through the use of development levies and partnership with the private sector is ongoing, and pipework is being put in on the ground, even though the capital required for the plant is not yet available.

Weirbridge council also enabled the placing of solar PV panels on much of the suitable council housing stock, providing great benefit in free electricity to the occupants and major reductions in household emissions but, since the council were unable to raise finance for the

installations because of cuts and borrowing restrictions, these were financed by its energy company partner, which received the corresponding income from the Feed-In-Tariff. There are also ongoing initiatives which are causing cycling and use of public transport to increase, including measures to encourage council workers to use train and buses. In Greenleigh lower emissions from the fleet were achieved by obtaining more efficient vehicles, but public transport services in a rural area are not such that it would be conceivable to encourage their use by members or officers.

Greenleigh, a much smaller council, while it supported 'bits and pieces' through its Health and Sustainability officer working on issues such as healthy and local food in schools and elsewhere, promoting recycling, and real nappies - was from the start more concerned to minimizing its own energy consumption than to pursue emissions reduction in general. Some success has been achieved, although one officer doubted whether the incremental process could continue to bring savings without more substantial investment.

The evidence in Table 4 reflects the fact that there were few champions for carbon reduction in Greenleigh, and that their actions had a somewhat heroic quality in bringing very limited political resources to bear upon the issue in an authority where many considered sustainability an irrelevance at best. Arising from processes initiated through Agenda 21 in the '90's, two part time sustainability officers were appointed in 2000, both women. One was able to initiate events and inputs, which were opposed more by omission and inertia than direct criticism by senior council officers and councillors (male); she resigned after a couple of years. Later a new Green councillor was elected who made it easier for the remaining sustainability officer to achieve 'bits and pieces' and a new Conservative leader of council emerged soon after the Foot and Mouth shake-up who was relatively open to policy suggestions, particularly if financially beneficial. It is possible that the Green Travel Plan was precipitated by external pressures, but most positive initiatives, even if responding to national policy, needed an internal champion for anything to happen (eg the PV panels on the Civic Centre). A strategic approach was quietly shelved.

Some years before this research central government had been putting pressure on the Greenleigh Council to put its house in order with administration and finance. It has also had rapid turnover of senior personnel, with low morale and a high level of complaints. Dealing

with this situation had for some years preoccupied councillors to the exclusion of many other issues, until financial cutbacks and the desperate need for employment growth in a very low wage area have come to the fore. One of the two Green councillors was able to promote a commitment to the 10:10 campaign, but the requirements for organizations to cut carbon by 3% a year were easily exceeded at a time of recession and reductions in staff and activities.

Smaller and poorer Greenleigh, with its scattered population, experienced a lack of officer time and expertise in some areas to implement more incisive carbon reduction programmes, and was entering into partnership with another authority to achieve financial economies while sharing expertise in some relevant areas. Thus it had some internal objective obstacles to greater achievement. Its greenhouse emissions did not decline so much as the larger urban authority; but its total emissions and emissions per employee were smaller than those of the larger authority, both at the start and finish of the study period.

The absolute difference between Greenleigh and Weirbridge's emissions per employee is very large, (1.5 compared to 6.8) though in terms of population in the district it is much smaller - 35 kg's per person falling to 30 kgs CO2e for Greenleigh and 50 kgs falling to 40 in Weirbridge. Part of this absolute difference must be due to the greater range of services provided by the Weirbridge Council to its urban population and greater capital investment in relation to employees.

The differences in carbon reduction, with a more marked and sustained fall in Weirbridge can be attributed with some confidence to policy as well as reorganization and staff losses. Underlying this are differences in political complexion, Weirbridge finishing the period with a Labour administration and Greenleigh with a Conservative one. However both councils had previously been Liberal Democrat dominated and even at that time profound differences in approach were reported by respondents. These must be considered in relation to the differences in attitudes and overall corporate culture described in Chapter 5, rather than exclusively political allegiances.

Community and business

Weirbridge had initially introduced policies for carbon reduction in its area, including private and public sector housing, travel and commercial operations through its Climate Change

Strategy, adopted in 2008. It commissioned a heat map picture of housing throughout Exeter to inform promotion of improvements. However by 2012 efforts to promote low carbon housing and businesses were restricted almost entirely to new development.

Several councils did offer a range of advice to businesses on achieving greater energy efficiency. Published sources tell us that Plymouth City Council went further and offered free and subsidized training in areas such as environmental management, carbon accounting, and energy management. Until recently it maintained a club for businesses interested in sustainability with a membership over 200, to which it provided a news service on relevant UK and EU legislation, regulation, local conferences and events and training opportunities. Plymouth was one of the areas chosen for piloting the Low Carbon Frameworks programme under Labour, the pilots eventually funded under the Coalition government. In December 2009 it created its own Climate Change Commission to bring together the city's business leaders, decision makers, scientists and academics. According to the Council, “making good use of Plymouth's wealth of expertise in this issue, the Commission is an interactive partnership that is already helping to lead on the city's Local Carbon Framework Action Plan” (Plymouth City Council 2013). Management of the club and the Commission have recently been transferred to the Chamber of Commerce, which receives no funding for this.

As with Greenleigh, other district councils in rural or mixed urban/rural areas did not have such aspirations to reduce greenhouse emissions beyond their own estate. None of the authorities studied gave priority to efforts to reach out to communities and businesses in relation to carbon reduction, though all were the conduit for national programmes (eg in Devon these were branded Warm Front and Cosy Devon) offering subsidized provision of home energy efficiency improvements for people with low incomes.

Of the two case study councils, Weirbridge alone aspired to reduce emissions in its area of administration, and unlike Greenleigh introduced systematic and at times adventurous measures on its own estate, though without the funded programme to engage businesses in carbon reduction which was adopted by the larger metropolitan area of Plymouth. The relevance of the various contextual and objective influences upon policy outcomes is

elaborated in the rest of this chapter, beginning with the section below, in which respondents related measures which, though desirable, had not been carried through. The importance of subjective factors is assessed in the main findings chapter below, Chapter 5.

4.6 What was not done

I had included in the interview a question about what councillors and officers felt would have been desirable but had not been possible. Many of the councillors in all districts avoided the question altogether, and the replies to this were generally sparse, so it was difficult to gain an idea of what further actions or projects authorities might have undertaken in more propitious circumstances. Those which required further capital investment were unlikely to be considered (such as insulation of the corrugated rooves of council vehicle workshops to retain heat from the electric wall-mounted heaters; insulation/refurbishment of Victorian premises without cavity walls).

The High Quality Passenger Transport routes for Weirbridge fell when they did not gain funding. Improvements to public transport facilities and the building of new rail stations have been delayed. However combined District and County application for funds for new roads and bypasses, (as well as small amounts for signage for cycleways and footpaths) have been successful. Councillors noted that roads have been prioritized in spending over public transport improvements and new rail facilities by both local and central government. Weirbridge has promoted Park and Ride schemes with free bus services linked. Although these reduce driving in the city and local emissions they represent a subsidy to car drivers which is not extended to users of buses who do not arrive in the town by car.

Building of high specification council accommodation has of course been very limited by funds and by the limitations on councils' borrowing capacity. Investment in solar hot water on council houses as well as solar PV would have been desirable, and without the Feed-In Tariff, more cost-effective. Perhaps this situation will be helped by the Renewable Heat Incentive.

I understood that the practice of choosing projects according to the shortest payback period, and the use of high discount rates in assessing project benefits (as prescribed by the

Treasury) also militated against investment where the benefits would accrue over a long time period.

4.7 Individual objective factors: Knowledge and skills

A number of respondents commented on the absence of relevant technical knowledge and skills within councils.

> *I would say to you, there is a complete lack of knowledge and skills on this agenda. It is. I mean, they are more environmentally aware, are planners, and across local authorities, and it's kind of the moral, we know we ought to be doing it, but the know how is, you know..* –Janet, officer

> *If you just know about climate change, and you know nothing about the potential projects that you can do, or the potential impact of those, or the cost of those, you'll certainly come up with the wrong solution,* - John, officer

Some of the comments referred to planners' grasp of the aspects of development which could affect energy use, resilience and sustainability. Some referred to the skills needed to bring existing housing stock to a higher standard of energy efficiency. Skills are also needed in the diffusion of ideas to the public and to businesses, sometimes a matter of interpretation for different audiences:

> *so it's starting from this lovely idea of saving energy and interpreting it into the language that they use, which could be economic, it could be accounting, it could be political doctrine – it doesn't really matter what it is. But part of the task, and part of the role that I've done …. is to look at this and interpret it in a way that people can act on* – Janet, officer

In relation to planning, Jim, a retiring senior officer from Weirbridge reflected that although the strategic management team were on board with the low carbon agenda

> *My colleagues in the planning team are predisposed to a strong amenity focus, because that's how you're trained as a town planner. Carbon is just another factor you have to deal with – number 21 if you like. I feel the big challenge is that, while intellectually they see a need for a major change of outlook, in practice they need skilling up.*

Jim's view that carbon reduction was *'more important than amenity, more important than appearance'* would certainly have been controversial in many rural areas of the South West.

However, the importance of appropriate commitment within planning departments was also emphasized by Alison, another senior officer:

> *Over the years, it's been one of the frustrations for me personally, is trying to engage planning in this, and for planning to understand how significant their role is. I think they get very focused on approving planning applications, and not seeing beyond that…..*

The relationship of different goals which have to be pursued within the planning system brings us to the edge of those factors which might be considered objective, and perhaps beyond. In the next chapter I consider subjective factors, including the important role of organizational culture, as well as of individual attitudes to climate change, and discursive repertoires on this subject in society at large.

Before leaving the topic of knowledge and skills, it is perhaps worth emphasizing that there are yet considerable reserves of technical expertise and relevant experience with carbon reduction within councils. Part of the aim of the Local Government Association's Climate Local programme (LGE 2014) is to enable this to be shared between councils, and this has been facilitated with the aid of publications, including a work book for councillors, other opportunities for sharing expertise and the case studies listed in the progress report for the programme (LGA 2013) which illustrate a great diversity of initiatives.

4.8 Pressures affecting Planning and Development

The reduction of greenhouse emissions was not foremost among the criteria applied in assessing planning applications and development policy, other than conformation to national building regulations as these requirements were gradually increased. On the other hand, one heard of occasional decisions where consideration of carbon emissions had been decisive. Weirbridge council decided not to demolish and rebuild a hideous department store, and to refurbish instead because of the carbon emissions involved in concrete. Greenleigh had its own version of the 'Merton rule', that developments should produce a proportion of the energy used on site through renewable microgeneration: in Greenleigh developments of over 50 housing units should produce renewably on site 10 per cent of the energy to be used in the development. The rule was not applied, and nearly all development

was in any case on a smaller scale. I have not come across other councils who had or who applied a similar rule.

In Weirbridge such a rule had been considered and explicitly rejected in favour of an approach which aimed to reduce carbon emissions from new development in a more cost-effective way, namely through district heating schemes. (Officers in other places discussed the difficulty of persuading councillors to focus on the most cost-effective routes to emissions saving rather than visible renewable generation installations.) The extra cost to a new house from installing solar PV was estimated at £28,000. This very high figure may be due to the fact that the study was carried out in the mid 2000s when solar costs were much higher. It was found that a similar tonnage of greenhouse emissions could be saved by a district heating scheme at much lower cost, although the scheme would initially run (and, it seems, possibly remain) on gas. Some effort was taken to persuade developers of the feasibility and desirability of this scheme, and to find partners and commercial buyers for the energy produced to balance the domestic demand.

However there is much development, in Weirbridge and elsewhere, where it seems that there is no attempt through guidelines or negotiation to ensure that homes are any more carbon efficient than the minimum building regulations stipulate. Attempts to achieve improvements ahead of the advancing requirements general building regulations have been discouraged. For example, the South West Regional Development Agency, as it then was, proposed in around 2008 to insist on zero carbon housing by 2014, a move vetoed by central government.

Development is strongly desired by local authorities. Housing growth, besides increasing demand for services and products of businesses in the area, result in financial benefits for councils through 106 agreements (and from 2015 through the Community Infrastructure Levy which can be used more flexibly) and the 'New Homes Bonus' of £10,000 per house. For authorities who have precious little capital budget this may be the only source of capital spending for much needed infrastructure. This is the carrot. There is also the stick. Core Strategies are held to be unsound and will not be approved by central government and achieve validity, unless they provide for a five year supply of land for housing which is

considered adequate by Inspectors. In addition developers whose applications for new housing are refused tend to go to appeal and to win their case. Weirbridge council, attempting to implement a Masterplan for city expansion, was frustrated in this manner, and at considerable cost. This dynamic has been accentuated since the introduction of the new planning guidelines in the National Planning Policy Framework (NPPF) under the localism rubric as outlined in Chapter 3, and refusals of applications by local authorities are often reversed on appeal.

It is hard to imagine that this prospect does not weaken the hand of local authorities attempting to ensure that developments increase emissions somewhat less than developers find most profitable. Those respondents who had a role in planning strongly denied this. With its own new build council accommodation, Weirbridge has invested in two *passivhaus* developments and will continue to reach *passivhaus* standard in future council housing – a pathbreaking achievement regionally. However the majority of new housing to be built in Weirbridge and neighbouring districts, by private sector developers, will be at BREEAM standard 3, although the aspiration in the Climate Change Strategy was to reach standard 4 for all housing by 2010.

As if this were not enough, we should also consider whether local vested interests play any part in the determination of development management policies. Matters like spatial position for supermarkets, car parking provision, size of plants, energy efficiency of housing are certainly the subject of negotiation between local authorities and developers. I was on one occasion present at a hearing with a government Inspector the purpose of which was to extract additional land allocations for housing from the local authority before the core strategy could be approved. Round the table sat representatives of 10 or so volume builders, one from the Environment Agency and one from the City Council. The hearing took place over three working days so it was unlikely that any other community or public interest body would have been able to afford to be present. One had the impression of a pincer movement being performed upon the local government which was only released when certain reservations about particular pieces of land being scheduled for housing were relaxed. Carbon emissions of course did not enter the conversation and nor did the energy efficiency or BREEAM standards of building.

Civilised relationships were also maintained between planners and applicants for major retail stores, supermarkets, and big employers in Weirbridge, and many variations in traffic arrangements, signage, renaming and so forth were made at their request. The city council did try to ensure for new applications that any additional supermarkets would be sited as near as possible to the city centre rather than out of town, but there was no hint of a question as to whether a further supermarket would be desirable. Similarly in Greenleigh, local commercial interests weighed heavily with the authority, those in the tourist trade lobbying heavily against any wind turbines which might in their view affect the attractiveness of the landscape, and some other kinds of development.

4.9 Financial constraints on carbon reduction

Among a variety of collective objective factors influencing carbon reduction, financial resources are, of course, key. Councils have few options for increasing revenue and access to capital, and parking charges and promoting building development are often the most authorities can do to alter their budget limitations. Priorities for investment are therefore likely to be strictly financial for the foreseeable future.

> *It's very hard to sit and look at, think about the environmental issues and the impact we have as an authority when we're literally struggling to manage day to day and year on year, we're struggling to consolidate our budgets and to ensure that we're not going heavily into debt* – Nicola, Councillor

> *At the moment, anything that isn't going to save us money or generate additional income, might have to be on the back burner at the moment* – Amber, Senior officer

On the other hand, budget cuts may heighten the pressure for significant energy savings. One estates manager, reported that although members were often unsupportive of any substantial capital investment to save emissions, the authority had reduced its energy costs by 8 per cent in the previous year, largely through the cost-saving action of the leisure centres and inclusion of energy saving measures in other projects.

The limitations to this trend are two-fold: capital and staff time. Some authorities still have considerable capital budgets, but in most the squeeze has also dictated that councils can consider laying out only modest amounts to save revenue, and then only projects with rapid payback (periods mentioned ranged typically from 2 to 7 years). Achieving further gains in efficiency can be expensive in staff time, and the technical expertise is not always available. Many of the posts carrying responsibility for energy management or carbon reduction have been lost or the role added on to an existing job. Some responses on this included:

> *We did have an energy efficiency officer, but because of cutbacks, we've had to amalgamate a couple of posts, we've lost one, squeezed two together, so now effectively I've got somebody working on it about 60% of their time..it's still good that we've got that.* - Bernard, Officer

> *we're going to see compulsory redundancies before the end of this three year cycle….. This knowledge thing is really important. People go out the door and they take all their knowledge with them.* – Morris, Councillor

> *The things that don't get through are obviously the things which need a lot of resource in terms of people. It takes time, there's a problem, cos at the end of the day, you know, voltage optimizers, this is a big issue to look at, if you know what I mean* – Richard, Estates manager

Moreover, many authorities are finding that swift gains in energy efficiency are no longer easy to come by. Richard remarked that the simplest measures had already been undertaken:

> A*ll the cheap easy hits, like putting insulation in and high frequency lighting, and T8 tubes and low energy bulbs. – we did that years ago, to be honest. What we're left with now tends to be the more expensive stuff, like boiler replacements or voltage optimizers*

Whereas, before the Coalition government's expenditure review, some officers highlighted councils' reluctance to take any risks, the current circumstances seem to have made them far more risk averse, and reluctant to consider projects with any degree of uncertainty. However this did not stop one rural authority turning down a wind turbine application against officer recommendation, an application which was upheld on appeal, at great cost to the authority. So some risks are more acceptable than others. This is consonant with the

general theory that motivation and willingness to pay to avoid losses (in this case of perceived amenity) exceed that to make gains (Thaler and Sunstein, 2008)

Despite overlooming financial imperatives, there has, at least until now, been diversity in how councils approach the issue of emissions reduction. It has been noted that one of the factors affecting this, though not the only one, may well be the political make up of the council. Among national parties there is more difference in action than in rhetoric on climate change, and this corresponds to differences in the views of their supporters.

4.10 Party Political and other contextual differences

A national YouGov (2012) survey asked the public whether they believed recent extreme weather events were the effects of man-made climate change. 32% of Conservative supporters, 48% of Labour supporters and 51% of Liberal Democrat supporters agreed that: "I believe we are seeing the effects", compared with 48%, 34% and 26% from those parties respectively who preferred the statement "I don't think we can say". Carter (2014) comments on the hostility of the Conservative right to climate change policy, and notes that they frame it (quoting Lockwood 2009) 'variously as a ''green tax'', as ''subsidies'', as an unwarranted intervention by the state, and sometimes as associated with Europe—all frames which connect with wider political values at the core of the Tory right identity'. (Carter 2014, p. 7)

The role of party political positions on climate change is clearly discernible, particularly in Weirbridge, where the Labour Party group among council members is clearly in command of progress in carbon reduction, even though in present circumstances numerous obstacles and limitations are encountered in cobbling together resource packages for particular initiatives, and there appear to be blind spots. In Greenleigh the Conservative led administration is not particularly interested in emissions reduction, though cost saving commands support. But even Liberal Democrat and Independent councillors are wary of supporting wind turbines because they are aware of electoral consequences.

This has meant that almost all councillors in Greenleigh are wary of being seen to support wind turbines, especially on their own patch; so party political allegiances do not explain the difference from Weirbridge; rather, underlying geographical and social factors explain both.

Many rural authorities like to regard themselves as 'not very political councils', and minority administrations are not uncommon especially in smaller and rural districts. These may rely upon Independents, who include renegades from various parties, left-inclined or environmentally-minded councillors for whom allegiance to Labour or Green parties in a rural area would be the kiss of death, and those whose views fit no party. In some such areas positive initiatives in carbon reduction came more from officers than members; in others officers appeared as a powerful force for inaction. This confirms that the political colour of the controlling party does not explain the differences between areas; and indeed there are also commonalities, found in the discourse, norms and corporate culture relevant to environmental action in the authorities studied which demand explanation in their own right.

Thus there seem to be other factors which underlie both party dominance and the prevailing views on the salience of climate change. In Weirbridge, there is a general predisposition to favour the low carbon agenda which is not opposed, even by councillors who are sceptical or doubtful about the anthropogenic causes of climate change. An officer describing a discussion of some item of climate change policy, reported:

> *I think one of our members,…. he was one of the people that I thought would have subscribed to the view that global warming is a hoax, and he said, to be honest, I don't know whether I believe in it or not, but he said, it's like insuring my house, he said, I hope my house won't burn down, but I'll insure it just in case it does.* – Ronald, officer

Whereas in Greenleigh it was more typical to hear views such as the following:

> *Well, Let's talk about Global Warming, I just don't know. I'm not qualified enough to know, I'm not a scientist, but [pause] you tell me about global warming, three weeks ago, a month ago, when we were at minus ten* – Jack, Councillor, 2011

Climate change is more commonly perceived as irrelevant or desirable in Greenleigh, scepticism is more common, and is articulated by many of the energetic opponents of

onshore wind, to supplement arguments about the relative inefficiency of the turbines. One often hears the case made in terms like these, from Alan, a councillor:

> *And there's a lot of evidence from Denmark and Germany, where it all started really, and around the world in America, Australia, that they're not efficient. They're expensive – though they're claimed to be quite cheap. And when they've finished their useful life, it's too expensive to remove them. They're also hugely – they're huge emitters of CO2…From the manufacture and siting – tons and tons of concrete! And then the disposal – which far outstrips the benefits in CO2 by having them on…. We know, they're less than – I think the average is less than 10%, I think it's less than 7% - but we know tidal hubs are about 80% efficient……With wind turbines, the amount of energy they provide for the cost etc, they're less than 10% efficient.*

Alan also believed that the science on climate change is doubtful, was uncertain about whether it might be a hoax, and in any case felt the matter was a long term rather than immediate problem. This statement coincides with the views being forcefully brought to councillors by the opponents of wind turbine applications, supported and resourced by national campaigners, including the view that production and disposal of wind turbines causes greater CO2 emissions than they prevent by supplanting other energy sources; in contrast many estimates suggest that carbon payback times for onshore wind are around a year or less (Turner 1999).

The root of opposition however seems to rest on resentment to the imposition of turbines – reaching heights of up to 120 metres – upon the landscape. This is often seen as a threat to the district's chief commercial asset, its landscape. A proportion of the population have chosen to live in Greenleigh, or to retire there, for the beauty of its countryside and coastal vistas; and many others depend on tourism for income. However they are not the only sections of the population averse to turbines close by, for which they receive little or no economic benefit, and who are susceptible to allegations that the resulting noise disturbs sleep, results in mental illness etc.

On the whole the supporters of wind development were less active. In Greenleigh and a neighbouring district, wind developers had wooed as advocates the small Green Party who in any case were vocal supporters of the development of wind power. However in a sense they did not do each other much good: developers were seen as avaricious big businesses,

multinational or national companies – at any rate, not local - and the Greens as eccentric due, for example, to their opposition to fox hunting and the culling of badgers. (As mentioned there are no Labour councillors in many rural areas to share the opprobrium.)

Planning meetings where turbine applications were considered were packed with opponents, and councillors were under considerable pressure to seek refusal of proposals for wind turbines on their patch to represent their constituents, whatever their own views about the financial prudence of this course and sometimes despite officer recommendations. I was informed by Rhodri, a councillor in a different rural constituency, 'They're very influential these NIMBY's …….. simply because politicans know that they make their mind up on the vote'.

Greenleigh councillors were on the whole not interested particularly in carbon reduction. Officers aware of potential investments which would reduce energy demand and emissions were wary of putting requests to seek external funding to councillors, unless returns were immediate and the business case incontrovertible. Thus, proposing an array of PV panels for the Civic Centre roof while the Feed in Tariff was at its maximum, Beatrice, an environment and sustainability officer said:

> *Well I've been investigating solar PV panels for this building ever since I came, and I've never had any support, and now, finally, for about a month now, I have a quote for panels for the roof….*
>
> *It's taken a long time, yea. It's taken that long to get to a stage where nobody has said stop doing this.*

It will be seen from this discussion that central government energy and climate change policy is also a crucial influence, whether through building regulations, or planning policy, which currently handicaps authorities wishing to insist on lower carbon emissions from new development in use (let alone construction) by volume builders; through reporting requirements, or in the way that it affects the business case for a particular investment (eg Feed in Tariffs, discount rate, or availability of grants). The incentivizing of wind turbines through the Feed in Tariff is regarded with resentment from a large proportion of the Greenleigh population, and a suspicion that they would not otherwise be viable. Where Feed

in Tariff affects councils' own decisions on whether to invest for example in photovoltaic panels, the argument and process which follows is then much less controversial since it concerns financial viability. A financial incentive, plus a champion to propose innovation, is a winning combination. Without the decisive business case, much more depends on individual initiative to identify financially viable options for carbon reduction, and upon the corporate environment to which we turn in the next chapter.

4.11 Emerging policy implications

In many situations those in possession of these skills have the frustration of not being able to put them to use. Respondents were invited to say whether there were changes which they felt could facilitate carbon reduction within their authority. The resulting wish list included the suggestions listed in Box 2 below. These are not necessarily relevant to all authorities, but these ideas indicate the possibilities which some respondents were already thinking about. In many cases, these possibilities represent ways in which the internal objective constraints on reducing greenhouse emissions can be relaxed.

4.12 Conclusions to Chapter 4

Thus this chapter has described the actions in which local government in this area has been involved to achieve lower carbon emissions. It has also explored the considerable differences between authorities, particularly between the rural and larger urban case study area. These differences are associated not only with political differences but with geography and the (somewhat related) social and cultural differences which result in very different external pressures on the councils from the public, and in very different practical challenges. Weirbridge's greater ambition and variety of initiatives, in comparison to Greenleigh, are linked to its size and urban nature, to some extent to its political complexion (control by Liberal Democrat and then Labour administrations), its retention of housing stock, and its personnel resources. It succeeded in reducing greenhouse emissions in both periods for which data were available, but the climate change impact of its estate remained greater than that of the smaller authority. Greenleigh's narrower scope both in policy and measures adopted are related to its much smaller budget and troubled financial background, its more

conservative (big and small C) constituents, the attractiveness of its landscape to incomers, and local hostility to wind turbines for which its geography makes it eminently suitable. However these differences are mediated, and in some respects accentuated, by the individual attitudes and collective cultural influences on policy discussed in the following chapter.

Box 2: Suggestions from respondents for local authorities to enhance achievements in carbon reduction

- Savings from energy efficiency to be recycled into further energy saving projects.
- Funds to support businesses in minimizing their energy use and to liaise with community and business networks.
- Overcoming departmental differences in implementing low carbon policies
- Using opportunities for local authorities to take a leadership role in promoting and using sustainable sources of energy generation, and for minimizing heating requirements in new build '*Munich is an absolute eye-opener*' Gerard reported, referring to a councillors' visit to the German city. *'It was just a phenomenal experience to see the possibilities of .. local microgeneration of electricity for one city. ……they took every opportunity to generate energy. We went to a primary school with eighteen hundred children. It was November, .. it was snowing outside, and there wasn't any heating on.'* One suggestion for doing this was to consider investment in renewable generation from the local authority pension fund, another to incorporate an element of hydro power when bridges are renewed.
- Electric vehicles were seen by some as the way to reduce transport emissions. However the more widespread use of electric vehicles would not reduce emissions greatly, since with current methods of mainly fossil fuel electricity generation diesel vehicles have lower climate impact. Electric vehicles would cut carbon only if renewable generation were commensurately increased. In terms of energy security – another matter of concern for respondents – this would be a positive step.
- A more discriminating approach to waste recycling, to try and increase the recycling of the most beneficial elements in the waste stream in terms of tons of carbon saved thereby. Aluminium, all metals and plastic, and paper rank high on this list, glass less so. Efforts could be made to minimize the amount of garden waste which is transported long distances to try to increase the recycling rate.
- For education authorities, there is potential for more work with schools, both on collecting regular meter readings and on using carbon reduction measures in the education syllabus.

Chapter 5: Subjective factors: Worldviews and Corporate Culture

If individuals are ambiguous about their desire for change, and central government, as we have seen, issues ambiguous signals, what are we to expect from local authorities on whom rest the expectations that they will carry out and lead a substantial share of the changes need to move towards the target reduction in carbon emissions for the UK in 2020? In Chapter 1 I consider the possibility that the beliefs and attitudes prevailing within authorities are an important influence on policy at local level.

In this chapter I present the main findings of the research. I look at the attitudes of individual respondents towards climate change and towards the relevant policies of their own authority, and then examine the 'subjective collective' factors, the corporate culture and approach to dealing with carbon reduction, seeking to identify the most significant aspects of this culture for policy outcomes. I explore whether there is a 'cultural toolkit' operating within local authorities which helps people to avoid looking at the implications of climate change and the apparent contradiction between articulated policy and practice**.** I then look at how attitudes differ across authorities and what difference this makes.

5.1 Individual subjective factors: Views and attitudes about climate change

Twenty-eight of the respondents gave unambiguous views about climate change, and these opinions were classified according to the schema in Table 5 below. The sample is not representative of councillors and officers in these authorities, as a random selection might be, but includes disproportionate numbers of those whose interests or training had taken them into environmental health, carbon management or development management.

Yet even so, a considerable proportion of this 28 denied or doubted the human causation of climate change (7) or viewed climate change as a problem much less urgent than others (6), perhaps in the 'nice to have' category, like the arts. In the general population of councillors and local authority staff the proportion of these categories – those who dismiss climate change as a problem – may be considerably greater as they are likely to be underrepresented in the sample.

Table 5: Views about climate change

	Opinion	Number	Number who could comment on scientific statements
A	Climate change is not happening, or doubtful whether it is happening	0	
B	It is happening but is mainly a natural phenomenon	3	1 (disagreed there are tipping points)
C	The jury is still out on human causation, doubt about findings of climate science.	4	2 (1 disagreed there are tipping points)
D	Climate change is anthropogenic but not urgent, or other problems are more pressing; or technology is changing more quickly than the climate	6	0
E	Climate change is urgent.	15	8

Views about climate change were also rather vague. Just under half could offer any comment or opinion on statements concerning the speed or scale of likely climatic changes, or on the possibility of tipping points in climate systems. Two of those who did comment rejected the view that there are tipping points within climate systems. Many respondents had never heard that environmental refugees are already leaving Pacific islands, delta settlements in Bangladesh, and areas undergoing desertification in Africa and China. However for impacts close at hand, knowledge was more precise. For coastal communities sea level rise was very much on the agenda, and remedial action for flooding in Weirbridge the subject of discussions with the Environment Agency. The implications of higher precipitation for road maintenance are also taken into account by Highways Departments.

A large majority of respondents did view climate change as a problem which was immediate and urgent. For a few, the sense of urgency translated to actions such as pressing for more pro-active measures to promote good practice in the community, seek funding for low carbon investment, applying carbon criteria to development proposals and opposition to projects which would lock in

higher carbon solutions to transport and waste disposal dilemmas. Most officers however were not in a position to do this to any great extent, and even many councillors lacked a sense of agency in relation to the problem of climate change.

5.1.1 Sceptical views

Among interviewees there were a few who explicitly and specifically expressed scepticism about the validity of climate science or the mainly anthropogenic causes of change; it was also reported in several authorities that these doubts were expressed in council meetings, both in urban and rural areas. In one rural authority, an officer said, this often contributed to refusal of planning permission for wind turbines, and deterred him from putting forward proposals for outside funding bids related to the carbon reduction, unless these projects could also be supported by a strong business case. Here is the statement of Dorothy, a councillor in an authority which has been very proactive on the carbon agenda.

> *as an academic background I'm a geographer, I studied physical geography at University, including climates and this sort of thing (chuckles) and the climate's been changing for millennia, way back in geological time. Yes, it's changing now quite rapidly, but it's changed just as rapidly in the past, before man's influence. As far as I'm concerned the jury is still out on what man's involvement in that is.*

It has been noted in other research, that climate sceptics often rate their own knowledge of climate science well above that of the average person. Indeed, among US Republicans scepticism seems to increase with education, although the opposite trend is observed in Democrat supporters (Pew Research Centre 2008). In another authority one councillor had objected to mitigation measures on the grounds that climate change is occurring naturally, and to interfere with it amounts to questioning God's judgement. Richard, an estates manager, also referred to doubt about the anthropogenic causes:

> *You will get totally different opinions on it, you know. I don't think people are convinced about climate change and its causes and everything else…….*
> *I think people believe that something's happening, but they're not entirely sure about why, or how, or precisely..and there's that distrust of scientists, they'll say they know what (laughs)… I mean, I'm not, you know, everything scientists say is wrong, I think that's*

> *a bit foolish comment, because obviously there are truths in scientific terms, but I think, you watch on television programmes, they're so definitive about things in black and white, and you think, well, before noon, they were saying everything was black and white, and afternoon came round and they said white and black, and then Einstein came round and they said black and white again, and they're saying ah well Einstein got a few things wrong didn't he? So (laughs) somehow everybody always says things are black and white but they never are.*

Another councillor took the same position, commenting that climate change was likely to be caused by '*the explosions on the sun. And they've been coming because they're having a lot of these Northern Lights'* or other natural cycles, and the question of human causation is still open. In Greenleigh I was told firmly by one councillor

> *I think we don't know enough about climate. We know there are wide natural variations, between ice ages, and we don't know what part we're in. And we cannot at the moment graph out what would happen on a daily, weekly, monthly or annual basis, for the last 200,000 years even, let alone for the last 2 million years, which would probably be a better example. So we don't know. There are variations in climate change. We hear a lot about global warming, and yet, everything is pretty much colder really. We've talked about melting of the ice caps, which I think is a cyclical thing, personally…. I think there are natural cycles. It's very dangerous to blame it on human activity.* – Alan, councillor

Some respondents at times even questioned whether warming was in fact happening – Jack commented for example that '*you tell me about global warming, three weeks ago, a month ago, when we were at minus ten, minus twelve every – I mean the road where I live, I was able to get out with a 4 wheel drive and tractors, but my neighbours didn't go out for nearly a fortnight*'. However, even those who expressed such doubts accepted that climate change probably was occurring, and were not in literal denial. Some people are questioning how observations are to be interpreted, are distrustful of scientists and government agendas, and ready to believe that the change we see is caused by natural phenomena, evidently not aware and not seeking information which would conflict with their views. In its colloquial meaning, denial is too strong a word; doubt or scepticism would be more accurate, though these contribute to implicatory denial as defined in Chapter 1.

Interestingly, Kate, a councillor who came directly from the least privileged background in a housing estate, was the most fatalistic in her attitude to climate change. A woman of enormous energy, who had founded a Food Bank scheme, responds frequently to housing and benefit problems, and campaigns on issues affecting those with low incomes, she did not deny that climate change was bad news, but was clear that '*It's a natural cycle. It's going to happen no matter what. I do believe that.*

It is going to happen, no matter what. Humans may try to fight it but they're not going to stop it'. Statements like this could be taken as evidence of denial of human agency, or lack of information about the causes of climate change. But in context (Kate had also retired from the planning committee, finding it unresponsive to her opinions and preferring to 'fight from the outside'), it might seem more likely to result from a kind of projection, a transfer of experiences of futility in the realm of human society and politics onto the realm of nature. In Chapter 6 I examine in more depth the possibility that hopelessness is a fundamental cause of climate change dismissal.

5.1.2 'Bottom of the pile'

Despite the sceptical views outlined above, the study found it more common for respondents to express belief that climate change is largely caused by humans, but that its importance has been overestimated. Particularly when it comes to expenditure they often identified many more urgent priorities for action - 'implicatory denial' in Cohen's terms. Even where councillors and council websites proclaim that carbon reduction is a high priority, the pattern of spending and the discourse about budgets tends rather to the view that carbon is in fact a rather low priority, if it figures at all. Not everyone expressed themselves as frankly as one councillor, reported by a respondent as saying 'I'm not interested in the bloody polar bears and what have you.'

Jack, a popular Conservative councillor, reflected on situations where Parish Councillors have been invited to give their views to members about '*what's most important to you and what's worst'.*

> *Sadly 99 times out of 100, apart from Arts and Culture, it's usually anything to do with environment, climate change, it's at the bottom of the pile … But that is to be expected, because, if you are a … single mother in [X estate] feeding your family of three young children, your most important thing is that you clothe, feed and keep a home for that family. Far more important than working on sunshine or snow.*

In fact, he ponders whether climate change could in fact be a good thing: *'If you talk to most of the holiday makers who come down here in the summer, and if it went from 23 to 27 they'd be delighted, cos they can go to the beach!'*

He sums up his views reading a card statement:

> *Climate change – last one you give me – is the most severe problem we're facing today more serious than the threat of terrorism. Codswallop. Um. Climate change is important, very*

important, but some of the problems we face, on a national scale – terrorism, immigration, food mountains or not, um, is a bigger problem than climate change. On a local level, in my opinion the biggest problem we have in the South West of England, is rural isolation.

Jack was able to distance himself from the issue with approaches such as the following:

OK, we may well be contributing to global warming and speeding the process up then, but is that always a bad thing? Y'know. And I would think it's incredibly difficult to, to say well if we continue doing this, in 3,000 years….. In 3,000 years the world may have disappeared and humans might be living on Mars. You know.

However he was then able to balance this with the statement that

If it was 30 years, I think people would listen. But then the other side of the coin is, well, one day it will be thirty years. And when thirty years comes it will be far too late, cos you won't be able to stop it. And so there again, at the balance, about which side of the coin you take. Erm [reading] "The science of global warming is doubtful" – well I've kind of answered that one.

Here Jack almost exactly mirrors the partly doubtful, and partly divided state of opinion on the council on which he pulls together a minority administration. Later he said: *The left hand thinks it's a load of tosh and the right hand thinks it's the best thing since sliced bread, what do you do?'…* (followed by a rapid change of subject).

5.1.3. Beliefs or strategies?

I have sought in Table 5 above to classify the views of respondents according to their voiced opinions, in a way which might lend itself to such interpretations as 'interpretive' or 'implicatory denial', as if the statements represented more or less settled belief. However, in a number of interviews it was hard to classify a person's views in this way because they expressed more than one view, sometimes one immediately after the other.

For example, Richard, the Estates Manager, has what might be called a three line defence:

1) he doubts the findings of climate science: *'everybody always says things are black and white but they never are.'*
2) Anyway the Chinese: *'There's no point in the West saving carbon emissions, if China and India are increasing by a bigger amount. What's the point?'*

3) He explains that council members will tend to veto major expenditure bids unless there is a strong business case; there is no point in proposing projects on the basis of their carbon impacts, only on the basis of 'invest to save.'

In contrast he, within his limited scope of agency, is working hard over a large range of tasks in a small authority and is slipping in measures to reduce energy consumption as part of many other projects.

Again, a councillor who tells me that she is sure that climate change is mainly a result of natural causes, agrees not only that her council can play a part in mitigating climate change but that individuals can as well. And Charlotte, a senior councillor, having said she had always thought there was a possibility that climate change was caused by '*sunblasts, explosions on the sun'*, then says that climate science has really convinced her; but, she adds, *'You see, how are you going to do it if….you see, the worst people are China and America, or some Americans are aren't they?'*

When people seemed to hold differing opinions simultaneously, or, in one or two cases, were reluctant to own any of the various views they reported others as holding, it suggested to me that there might be a more fruitful way of looking at them. These statements are ways of constructing the issue, and perhaps they are best studied in context to see whether they serve a function; whether they tell a story which explains or gives meaning to the teller's position and practical responses to information about climate change.

In contrast to Cohen, whose main concern is to understand, classify and isolate denial of atrocities and suffering in the cause of human rights, Kari–Marie Norgaard in her study of a small Norwegian town, takes a different approach. She draws on Cohen's typology, as I have done, but describes the 'positions' as among a cultural repertoire of responses which people actively use all the time in everyday life, in order to manage unwelcome emotions such as fear, helplessness and guilt.

In this portrait of climate change denial, Norgaard draws on the work of social psychologists such as Eviatar Zerubavel (2006), to explore the manner in which denial is socially organized. Avoiding certain topics or conclusions draws on cultural repertoires and norms regarding the control of attention and emotion, so that 'ignoring is done *in response to social circumstances,* and *is carried out*

through a process of social interaction' (Norgaard 2011, p. 9, italics in the original). Accordingly, she identifies conversational gambits and statements people make as constituents of a cultural toolkit, a set of strategies and stories, to reconcile their awareness of the seriousness of climate change with their conformity to surrounding social norms and perspectives, and to the political economy of Norway and its place as an oil producing nation. The unwelcome awareness could evoke emotions and expressions which transgressed the norms of small talk or social gatherings, and thus the 'cultural toolkit' strategies enabled people to avoid attending to or thinking about climate change, particularly in social settings.

This view is salient with the psychosocial approach which would interpret the contradictory statements discussed above not only as strategies to manage social circumstances but as 'positioning', positions the subject takes up in relation to others and to self which reveal inner conflicts; the management of affect which accompanies perception of uncomfortable realities occasions both a social dilemma and a personal one.

This excerpt is from a conversation with Charlotte, a councillor, about her images of the natural world, after we had spoken about climate change and other subjects. She begins to speak about the need to 'live with yourself'.

> *G: ….but if I were to say what images, for the natural world, what do you think of first?*
> *C: (Long intake of breath) That's a tricky one. One feels one should do more. (pause)*
> *G. (Elaborating the question)*
> *C: I can live with myself. I know what I've done, I know what I've been. I know I*
> *G: Yes*
> *C: You've got to live with yourself…..*
> *G: But I wondered if there are particular bits of nature that you think of*
> *C: I don't like the forests being burnt down for the sake of earthly gold or whatever. That I do object to. Um. I fear that we could do more, and I think science could do more to do with the African problem of no water, and to do with the problem of these camps – but they're genocide, a lot of them.*
> *G: (murmers) It's heart-rending isn't it*
> *C: It is. You think, My God, what would you do? And, to be perfectly honest, I love Egypt, and I look at it at the moment, and think, God, and think, you know, what's that - I love what they did at the time it happened to civilization, 2000 years you sit there and you look and think, without any modern.. It baffles me. I sit in awe of that, I must admit. I think a lot – I think out of sight, out of mind. Out of sight out of mind.*
> *G: Is that the case with climate change as well do you think?*
> *C: I jump up and down about homelessness.*

This part of the conversation feels very much like the answer to an accusation. There is a fending off of guilt; return to 'we could do more', a correction to 'science' could do more, reference to genocide as a reason for not doing more, a diversion to Egypt, and surprisingly, a conclusion apparently returning to the difficulties in Africa, or perhaps a reference to climate change 'out of sight out of mind.' When I ask directly about climate change, the subject is ignored and the answer comes directly back about homelessness, where Charlotte does feel she has made a real contribution.

Norgaard describes a variety of conversational and social strategies for selective attention, and the control of feelings, and therefore, of thoughts. These strategies are also used to control individuals who do not conform to conventional norms of expression and behaviour. In stressing that denial of all sorts of issues is a dimension of 'normal' behaviour - indeed is part of how 'normality' is constructed - Norgaard shows how not looking at the implications of climate change is deeply embedded in the warp and weft of social life. This perspective seems to give a more successful account of how inaction on climate change occurs on a social as well as a political level, and of why it may be so hard to change.

If scepticism or 'bottom of the pile' attitudes do represent a kind of strategy to justify inaction, then it is interesting that no such climate change dismissal was observed when talking to councillors from Dawlish. This is because, it was explained, 'without the railway we would not be here'. The main railway line which links Exeter and Plymouth travels for part of its distance directly along the coast beneath cliffs of crumbling rock, and requires costly work to maintain against rising sea levels and higher storm surges which are caused by the apparent greater intensity of depressions moving across the Atlantic. Without the line, coastal erosion would threaten to the low-lying coastal strip on which it is situated and would result in Dawlish becoming inaccessible by train '*Without Brunel we would not be there*', Grace, a member of the Dawlish Town Council told me. They were also concerned that Network Rail would only guarantee to maintain the line for a limited period. '*They're giving us 20 years – no more!*'.

(This research took place before the storms of early 2014 washed away a section of the line at Dawlish and hurled rocks at the row of houses facing the sea, some of which suffered substantial damage.) The benefits from acknowledging climate change are direct and local and the remedy, maintaining the line, is clear to local residents. The need for flood defences also seems to be unchallenged by any vagueness or scepticism about climate change. It is only mitigation policy which

is affected by climate change scepticism or dismissal, and the fact that benefits are diffused and uncertain does suggest that there is an element of rational choice, in the classic sense, about what people choose to ignore.

5.1.4 Urgency and action

Many of the officers I spoke to were selected for interview by virtue of their responsibility for energy management, recycling or environmental health. It was clear that for many of them climate change was a key concern and motivator for their activities. For example, one such energy manager in a mixed urban/rural district, described the balance of views in his council:

> *I think there's a strong faction among the elected member who believe [that climate change is mainly a natural occurrence]. But there's also a passionate group of members who don't subscribe to that at all. Dare I say it I would say that senior officers here believe in climate change. My director does. He's very passionate about it* - Bernard, officer

His own views were that the science was 'pretty robust'. *'Certainly a long term problem, but I really do believe we've got to get in and do as much as we can now, because, it just feels to me like we're on a slippery slope. You can tell I'm a pessimist'.*

Indeed during the interview he was fiddling with and twisting the card statements as he spoke, noticing only that he had done so when I retrieved them. This officer had got a timespan in mind – he thought four degrees was relatively likely in 200 years.

Alison, a director:

> *Right I can discard that one immediately, this is about the science being doubtful. (rapidly) I don't think it's natural. (thump as she puts the card on the table) Don't think it's a hoax. (thump)(thump)(thump)*

Some councillors, too, reflected an urgency in their attitudes to climate change. Gerard, a senior county councillor who has held environmental health portfolios, adds a moral flavor:

> *of course there have been natural occurrences that have caused episodes of warming and cooling of the earth's – of the planet, but this is the first time that it's been activated by man's greed and avarice.*

He speaks of the likely cynicism of young people when they see that little is done about climate change.

> *I don't want that to be the reaction, I want it to be the contrary, I want it to be enthusiastic, I want it to be focused and conscience-driven if you like, or whatever, and certainly some enthusiasm about it, but I don't necessarily see that coming through as a shining….*

Later he adds

> *But there is that overriding sense of, OK, yea, but what can I do about it? It's becoming aware, but then lifestyle changes have to be made. You know, I've got to use my car less* [followed by review of other lifestyle measures].

My sample was not typical, either of members or officers, but nevertheless there were a striking number who did clearly feel strongly that the issue is an urgent one. This group tended to feel that personal as well as public action is essential. Among this group were also a more detached contingent who viewed the matter as urgent, but were less committed, or hopeful, about effective action, certainly at local level. John, an Independent councillor in Greenleigh was pessimistic about carbon reduction and about the electoral prospects for those who urged action: he commented '*I think it's a human thing. You cannot burn billions of years of oil laid down and carbon laid down in 400 years and not affect the heat of the planet. I just can't see how that can happen'.* He continued..

> *You're going to burn that coal. There's that, you know. Your immediate needs. Maslow's hierarchy and all the rest of it…. Very few people would put the climate first. This would fit in on the second level for the majority of my constituents. If I said to my constituents, when I go to vote next time, when it comes to elections, I'm going to [support] wind turbines all along the villages , it's your environment being sensitive to your grandchildren in years to come, I know that I wouldn't get elected again……*

5.2 Collective subjective factors: the corporate environment

Some features of the corporate environment, while not specific to policy on climate change mitigation, almost certainly made it harder for such policy to progress to implementation across the board, beyond the energy management for the councils' own estate. These might broadly be called institutional factors; they include the departmental structure and the 'standard operating

procedures' relating to development control, the financial assessment of investment opportunities and the timescale considered for payback.

5.2.1 Departmental differences

A further difficulty in attaining a unified approach is the segmented nature of councils, as with many organizations, where culture and attitudes vary between departments. One officer referred to the 'silo-ed nature' of the council. And whereas another officer, Kenneth, felt that his council, Weirbridge, was a good deal more consistent than the government in its commitment to sustainability, this view was not universally shared. Kenneth, who has investigated means to make the housing stock more energy efficient, commented:

> *There's this strange left hand right hand feel about this government … They've just announced a conference on community sustainability for future development which is going to talk about future housing and how we do it, roads, how we do it, whatever. So they have these conferences, and they talk big talk, but actually when it comes to doing stuff, I'm not getting the feeling that they're actually committing funding, committing doing. They've actually – you know, the solar panel fiasco, the FIT system, and they've been found wrong, and yet they're going to appeal that again! And so you kind of get the feel, that although I say to you, if the city council, although we say if housing is first, sustainability cuts through everything, you feel with the government, it doesn't cut through everything. It's still for them, an either or, not a 'this' but a 'that'.*

However, Alison, an officer in the same council, remarked: *'Over the years, it's been one of the frustrations for me personally, trying to engage planning in this'*

In another authority, when I asked Frank, a councillor and member of the planning committee, whether greenhouse emissions were ever considered in planning decisions, his reply was:

> *Cor. (Thoughtful pause) Not really. No, not really. It's more impact on the road structure, the infrastructure, the sewage, the water drain off – all things like that, rather than polluting the atmosphere.*

Whether this is a matter of culture or skills is debatable, but respondents concur that it is desirable, but difficult, to ensure that all departments are reflecting the same values and commitment, even where this exists at the highest level. Even where there is, or at any rate has been, a Climate Change

Strategy in force and carbon reduction is among the authority's declared aims, different departments often have different degrees of buy in. In Weirbridge, Alison said:

> *You hear it right across the whole piece, because you hear the Childrens' Department saying, you know, everybody's got to do an impact assessment about how their policies are going to affect children, and DECC are saying to look at the effect on climate change, and in fact they're all merrily saying this and ignoring each other….And very often you've got, it's a silo thing again, you've got a forward planning group drawing up core strategies and spending hours sweating over these things and then the people in development control just go on doing whatever they did, you know, it's quite difficult.*

In different authority, Jeremy, an officer with climate change written into his job description also had positive reflections:

> *I do think the authority has developed the culture of being green, which wasn't here 6 years ago, and I'm not saying I did it…... But I was part of that process of the organization beginning to say, from a member push really, we ought to be doing something about this…… so it's become part of the culture of the organization.*

But yet he says later

> *I don't think the sustainability issue is yet engaged in the cultures of a lot of the other directorates, I mean this directorate people understand it, in this directorate , but it has environment stuck on the front of it, so they begin to understand it, um, but the others it's a little more difficult.*

The directorate in which Jeremy's unit is situated is Environmental Health. In many instances climate change policy, having been identified as an environmental problem, is placed within Environmental Health where it sits alongside Air Quality, street cleaning, recycling and other issues relating to the local environment. Environmental Health is not one of the most prestigious portfolios (such as the economy, or 'regeneration' as it is often known), and someone beavering away in that department may have a hard time getting others on board. Jeremy, quoted above, had powerful backing from the portfolio holder in the cabinet (Gerard, whose forthright approach is mentioned in the note to Chapter 2) and he was therefore able to make some headway, but this was often not the case. It is tempting to compare this with the splitting whereby individual psyches are defended from the awareness and integration of unvalued parts of the self; a sense that carbon reduction is 'taken care of', is achieved by the organization as a whole without undergoing a more thorough engagement with the issues.

5.2.2 Short termism

Short termism in local government was an almost universal complaint. As Morris, an experienced councillor commented:

> *Twenty years, we make plans for twenty-five years, planning, LDS and all this sort of stuff. But the officers know that they'll be moving on in their job in a year or two, or retiring in two or three, or whatever, and councillors may or may not be re-elected. So.. the continuity and long termism isn't necessarily high on the priority list*.

Rapid payback periods are usually demanded, by finance departments, by external funders and to reduce risk. The SALIX funding source for interest free loans to public bodies expects payback in four years, five at most. For Richard, the estates manager,

> *I have to go with what our accountancy team tell us. Um. They've not given me a definitive time period, I mean what they're normally looking for is doing potential borrowing for it and they'll do the calculation on whether they think prudential borrowing will pay for it. … the five or ten year period they seem to be quite happy with* – (interview, 2011)

However, it seemed that even during the years of the research study, the expected payback period was becoming shorter. In 2012, Kenneth (officer) told me that if pay back was 'three to seven *years I would do it'* and in 2013 Bernard (an Energy Manager) commented:

> *One thing we did which frankly I didn't support, but we wanted to make a point politically, was that we put solar photovoltaics on this building. And they're great and their paying back and they're doing work, but they're going to take a bit longer to pay back, 7 ½ years, whereas most of the projects we're running on are now running about 2 ½ years*

His comment shows that it is, or at least was once, possible to make political choices in favour of investments with less immediate payback times, (a lower internal rate of return), though nearly eight years can hardly be called long term. It is however, longer term than the perspective on the next council elections.

> *I think most councillors struggle to see a life beyond their next election date…. and I think at the moment, with the recessions, as with everything else, it's very hard to sit and look at, think about the environmental issues and the impact we have as an authority when we're literally struggling to manage day to day and year on year, we're struggling to consolidate our budgets and to ensure that we're not going heavily into debt* - Nicola, councillor

And Morris, after mentioning the failure to refurbish an energy-guzzling civic centre, added sourly that

> *Everything is about short payback isn't it? It's the problem with our country. Banks are exactly the same. Yea, if you say to a bank, look at this, it works over 15 years, they don't want to know'.*

A rural councillor, John, rooted in generations of nonconformism and farming, observed, in more general terms:

> *It's like drawing money - the carbon issue is like drawing money from a bank account that's running out... At some point we have to live on the same amount of energy the sun sends to us every year.. And what right have we got to say to a Third world country, sorry, you can't have a coal power station? Because we've had it….It's far better to allow them, to agree with them they can have an economy that can pay their own way…..– send them £20 billion a year so they don't have a power station…… you have to build your society around, well this is sustainable today, and then drive that into the longer environment without so much emphasis on consumerism I suppose. I think we're still very much a growth measured society. It makes me very worried that there's a lot of stuff we don't need to do…… I can do a holiday for £150 quid. And there's nothing better than getting somewhere with a glass of wine and a good book!*

5.2.3 Risk aversion

Quite a number of respondents mentioned the element of risk which deterred more ambitious measures to obtain emissions reductions. This was brought up in relation to specific projects (such as a community heating system) and in general terms.

> *They just want that even keel, safe, secure, they won't take a risk……*
> *There are one or two people within our leadership that don't want to put their head above the parapet, that's what they have been taught, not to stand out. And you do learn that actually. Local government!! (laughs). Yea*. – Annabel, officer

> *The biggest obstacle has been the lack of understanding and the risk of doing something new, something untried and untested* – Janet, officer

> *But a lot of people get re-elected as councils by doing as little as possible* – Morris, councillor

The risk concerned is generally financial as well as political.

> *there is an incredible nervousness amongst, certainly amongst officers of defining things in a policy form that may be contentious. There's a huge fear of litigation. Every time we reject*

something in a plan, and there's an appeal, and we lose, it costs us - as a council, and it costs us as persons within the district – Alan, councillor

The salience of financial risk is, of course even greater in the straightened financial circumstances affecting most local authorities after 2010. A sense of frustration often pervaded comments about what was sometimes identified as lack of leadership.

You know people need to be brave enough to make decisions. They might sometimes be the wrong decision, but we've got to be brave enough to do it, and we're lacking in courage and leadership in this country, I think probably globally, we are actually at the moment. It's all very much pandering along, and, let's actually make a decision. - Alida, councillor

5.2.4 Difficulties experienced by proactive players

A number of officers registered that measures to achieve carbon reduction were helped or hindered by the norms and culture of their organization. Where those tasked with energy reduction were aware of support from senior officers or political commitment from the administration, the sense of possibility was very different from those who lacked such support. The attitude of senior officers, as seen by members or as described from 'below', was immensely important in determining how far an initiative might get.

We have already seen evidence that many councillors consider carbon reduction to be a low priority. The same was often held to be the case among senior officers. Ample evidence of this came from Greenleigh, even though some positive initiatives had taken place. Engagement between councillors and public through Agenda 21 had led, in the year 2000, to the appointment of two part time sustainability officers, one working in sustainability and health, the other working on policy and planning aspects. The first, Annabel, was about to leave at the time of the interview; she explained this:

You see we worked our way up the Chief Exec's list, and then he left, and then…. we've come bottom of the list again. So where I was starting to get money to do bits and pieces, that's fallen by the wayside..so..and also with the cuts, it's not going to happen really, so….

The second part time officer had left some years earlier. Both felt that despite some achievements, the need to make substantial changes to implement carbon reduction held no priority among senior

officers and councillors. *'They've got lots of policy you know – it's probably still sitting there in a drawer somewhere'* this officer related . On one occasion an expert on renewable energy invited to address the whole council was allowed five minutes at the end of a crowded agenda to deliver his half hour talk. Documents were not responded to and initiatives forgotten.

Frontal opposition to carbon reduction measures from officers was hardly mentioned, although Gerard (a senior councillor) reported:

> *the renewable energy at [Council Z], the officers weren't very keen on that. The chief executive took me aside as soon as I mentioned that, he said we're not going down that path. We don't want that. Um, that's not for us. I said, Well, I think you should reconsider because I want it and we want it as a party, so we will move towards that. Well, I get the feeling, that any hard evidence, every obstacle was put in the way of that happening. It certainly took a hell of a long time for it to evolve.*

Later in the interview Gerard returned to the subject:

> *they've identified – I was told it would be up and running by now – you know, as usual they rush on with these things – I was told a couple of months ago that we'd identified 40 or so sites throughout the county [for PV installation] that were the most ideal sites, in other words, south facing and all the rest of it – and they were progressing those within a month or six weeks. Well, that hasn't happened yet, but it's such a good, sensible, long term investment* – Councillor

This was probably not a situation – there were several – where the officer chiefly concerned opposed councillors' desire to install PV panels or perhaps small wind turbines on some prominent building, in favour of more cost-effective but less visible carbon reduction through energy efficiency measures.

Thus difficulties were reported by those who wanted to promote specific projects and policies, which, for the most part, were actually on the agenda. There may also be projects and policies which don't make it onto the agenda, and here the over-arching culture, as manifested in the norms of discussion and discourse, is more relevant than obstacles which can be discerned once a process has been initiated. But what direct evidence do we have in the interview data, of social norms and attitudes which are at play?

5.2.5 Repertoires, norms and the cultural toolkit

I raised earlier the question of whether responses to questions about carbon reduction and climate change are best considered as beliefs and world views, or as strategies to defend against anxiety or guilt and to protect a sense of security and personal or institutional goodness. Within the dozens of hours of interviews there seemed to be certain patterns or themes which recurred, which manifest attitudes shared across members of an organization, a party or society at large.

The business case

Although in circumstances of financial austerity there is ample justification for the business case to hold a very prominent place in councils' decisions, I wondered whether the near universal dominance and acceptability of an economic discourse is a social phenomenon which can be problematized, rather than merely an instrumental aspect of the allocation of funds. We might bear in mind the universal reference at national level to whether policies have successfully promoted economic growth as an unquestioned and sometimes supreme criterion of value. At local level, where constituent members of local government may arrive with profoundly differing ideologies and worldviews, the economic assessment of decisions forms a unifying discourse, accepted by all parties.

A business case does not necessarily instantiate the requirement to make profits, or net cost savings. It may include the likelihood of a council obtaining grants to cover the required expenditure set against the benefits to be obtained. This study is too limited in scope to determine whether the benefits are more often evaluated in financial terms than formerly. Certainly this is by no means always the case, for example in decisions involving cycle tracks, pedestrian safety, street lighting, health and child safety. Yet decisions affecting carbon emissions – evaluated under the Carbon Reduction Commitment (CRC) in terms of cost per tonne of CO2 emissions prevented - appear seldom to benefit from evaluation in terms of social impact in normal council decision-making. (In any case only the very largest councils fall within the CRC.)

At the start of the interviewing in 2010 I heard evidence of councils – particularly two Liberal Democrat dominated authorities – insisting on carbon reduction measures despite the cost to the council budget. Such examples were not reported within the years of the study (2010-13). Has

economic necessity gained for the financial discourse a universality and cultural hegemony which it did not have before? If so this would represent a retreat from the consideration of public benefit in favour of the narrower organizational advantages, a kind of corporate individualism. Again, this is in line with the wider national and international neoliberal assumptions and discourse on economic matters. These kinds of assumptions are reflected not only in public policy but also private decisions. For example, Joanna, a councillor concerned about environmental issues, an organizer of local litter-picking events and very public spirited in other ways, related her conversation with a builder about insulating her cob home, which was often chilly:

> *How can I do something about my walls to insulate them? And, you see, this is the other thing, he said, I can come, I can do it, I can clad it and put all this stuff on. He said, Joanna, you will never see your money back. You're going to have to live for another 60 years to see your money back. Am I going to do it? I'm not.*

It was not surprising that Joanna, like many others, concluded that the benefits were not worth the outlay, but also that as so often found, the only benefits which both parties assumed to count were the personal and financial, and the personal benefit of extra warmth or the social one of lower emissions did not enter into the balance.

Other features of conversation repeatedly encountered in relation to carbon reduction and climate change were less pervasive, but have in common that they enabled speakers to distance themselves from the problematic consequences and issues associated with climate change, or to compare and assimilate these issues to others in the past which had been successfully managed; or to keep the focus determinedly local to limit the scale of concern.

Ignoring, minimizing and the application of flippancy

I was surprised that examples of being able to ignore difficult questions would arise so readily. I had not designed the study in such a way that this would be easy; by using the cards with statements and media headlines about climate change, and those with questions about agency, I had sought to prompt more conversation about the topic than would otherwise occur in the interview about council activities. Council officers on the whole attended to the questions I asked and answered them; and being busy people, the interviews were often shortish, taking an hour or less; but the elected members' interviews typically took an hour to two hours, sometimes longer. They were

more likely to take detours to put a point of view, extrapolate onto additional issues, and to make rapid changes of subject. For example, when I was talking with Charlotte, a very experienced councillor, about her perspective on the future, this exchange occurred:

> *G: So taking it all in all - these are quite long term questions some of them – I wonder how you feel about the future. I don't know whether you have grandchildren?*
> *C: I have six – two in New Zealand and four in Gloucestershire.*
> *G: So a worldwide family*
> *C: No, of course I do. One thinks of their….but I tend to be realistic. How realistic is it – I don't know - you can only go with your common sense. I hope I've got some common sense. What are your views on nuclear then?*

Perhaps this councillor's reply illustrates the repression of a degree of anxiety about the future, which could then have led by association to the nuclear question. The question however was deployed in such a way as to divert her and my attention from worries or fears about the issues the grandchildren would have to face and to invite me to answer a question on which she might imagine I had strong views.

I have already referred to instances where respondents used flippancy to dismiss climate change, for example as a problem which, they imagined might take place in the same timescale as settlement on Mars; or might be a fillip for the tourist trade. Alan, a councillor, related it to rising sea level, which he said would not be a problem: *'If there are sea level changes then we will move up to higher ground. I don't think that they're going to be that drastic. I think the figures have been quite extreme that have been promulgated.'*

Flippancy, humour and cynicism are techniques by which a speaker can distance themselves from the emotional impact of information; and to avoid showing, or perhaps even feeling at a conscious level, emotions which are unvalued and perceived to be socially unacceptable, particularly for men. The disconnection from feelings parallels the disconnection from the natural world observed by Jaeger (2009), and is seen to be related to it by Macy (1998) and Rust and Totton (2012). The latter also relate this distancing to disconnection from the body and the lively role of sensations and symptoms in the move towards integrity and wholeness.

Impacts seen as distant in time and space

Some comments related climate change exclusively to polar bears, or to Africa. Obviously for some, interest was limited to impacts which were local. When commenting on a statement about environmental refugees, Jack said:

> *Wouldn't know much about it. Cos it ain't happening in Greenleigh, um, as far as I'm aware it isn't happening in the South West and it isn't happening in the UK. And although I do me bit to support anyone in the world, they are really the most important to me, so I wouldn't really know.*

This attitude was not, however, universal and there were many examples of active concern, both about the more distant impacts of climate change, and about effects which were known and closer to home. Erica, a younger councillor with a good degree, said:

> *I think this is true – environmental refugees leaving – yea, you can see in the Horn of Africa the amount of people movement from one place to another, and the strain that's putting on resources of already fragile governments – even Kenya, which is relatively stable for an African country.*

This was an interesting contrast with an older councillor from the same authority who tended to believe that climate change is due to natural causes; but in relation to the issue of environmental refugees, related this immediately to the UK: '*Well that would follow on there if you think of East Anglia*,' reflecting perhaps areas of retreating coastlines and reports that some parts of East Anglia would not be defended from the sea as levels rise.

However, like many of the other respondents, Erica did not share the view that climate change was essentially a problem far away in time. In discussing the statement that climate change is a long term problem and will have to be dealt with mainly by the generation who are now children, she said:

> *Yea, (pensively) in some ways, I think the most depressing thing is that everyone sort of thinks that that's true, and yet at the same time by that point they're going to be too late to do anything about it, which um – I mean there are scientists who think that it's already too late.*

Again, there was considerable awareness in some local authorities of likely local impacts of climate change which required immediate action, such as flood defences in estuaries or contingency plans for a larger number of weather emergencies. The highways departments are already laying out priorities

for road maintenance in the event that they are unable to maintain all roads in the conditions to which they have hitherto aspired. Alternative routes for the main rail line to Plymouth were being discussed as the coastal route via Dawlish looks increasingly vulnerable So there is a good deal of realism and foresight in those departments charged with adaptation to climate change and impacts are not universally seen as distant in time and space.

Among the cards on which I asked for comment, I included two which referred to expectations about future temperatures. The most pessimistic, and differing from the more usual projections such as appeared later in the IPPC fifth assessment report (IPCC 2013) for 1.5° – 4°C by 2100, was the suggestion from Professor Kevin Anderson, a much published climate scientist, that there could be a rise of four degrees in global temperature in business as usual scenarios within fifty years. Among those who knew something about the science, this card did often elicit a reaction in which respondents mentioned their own estimate or assumptions about timespan for change at this level without global policy change, ranging from 100 or 200 years to 3,000 years.

Framing – comparison with other issues

In Greenleigh, when asked about climate change, councillors especially tended to identify the issue as concerned purely with wind turbines, and to compare it with the siting of other installations likely to result in local resentment, or as we have seen, with Arts and Culture which are not 'bread and butter' issues.

> '*the wind turbine story seems to have caused an awful lot of upset in communities. Divided communities, continue to divide communities….. It's a bit like the gypsy and traveller sites, we've had a few problems with that recently. Sadly, in every parish, people say, oh, sense of well , gypsies and travellers are all part of our community and should be treated with dignity and bla bla blablabla, but not in my backyard.* - Jack, Greenleigh councillor

Another Greenleigh councillor, Kate, spoke of wind turbines as if their significance far eclipsed that of climate change as such. We had been discussing food poverty, and the transition to talking about climate change seemed difficult to make.

> *G: And just to put the case to you, if in some years time we're getting more of these endless downpours, (P: Yep) and more high winds … that's also going to be really difficult for people who depend on food growing and things like that.*
> *K: Well, to be honest with you, I don't like windfarms anyway – I don't. I'm not one for it.*

Diffusing responsibility

Fairly typical, as among the general population, were statements which placed carbon reduction in the UK in the context of much larger countries whose climate impact far exceeded our own.

> *You see, how are you going to do it if….you see, the worst people are China and America, or some Americans are aren't they?.....I mean, to be perfectly honest,…., it's fine me doing it, but then we're taxed for doing it, while others are not being brought into line. And how would you bring another country into line?* - Charlotte, councillor

> *You've only got to look at America, who are, you know, two fingers up to the rest of the world, pardon the expression. But they don't seem to take it as seriously as other countries do. – Amber, officer*

Similarly, when asked about the relevance of individual actions, Richard an officer, made a rather despairing comment about a lot of little things adding up to a little, and added:

> *There's no point in the West saving carbon emissions, if China and India are increasing by a bigger amount. What's the point? You know, it all helps. But it doesn't actually solve the problem, in reality.*

There is no question that these statements reflect a reality in that the UK alone does not have the power to solve the problem of climate change. The officer was in any case working on a council commitment to reduce emissions; but had been resistant in the past to taking on more initiatives. This may have been partly due to the uncertainty of being able to persuade members to back such initiatives. Add to this the pressure of time: though more progress was technically possible he did not have time within his own schedule and with his staffing level to progress the agenda any faster. So the sense of ineffectiveness could have been reflecting more than one situation. But the placing of this comment in the discussion of individual responsibility suggests a comparison of 'us' – in this case 'The West' – acting responsibly with other large countries behaving irresponsibly. I was interested in the omission of America, a usual culprit in such remarks, from the list of villains. The responsibility for historic emissions also seemed not to be a material consideration in these remarks.

Another view, mentioned more than once, was that although climate change demands immediate and radical action, probably not much will change 'until we run out of oil'. Diffusing responsibility can

also occur in a more immediate and local sense, for example in bemoaning the already-mentioned short termism in local government.

> *I don't think we discuss long term issues enough. And I don't know whether that's because we don't have an answer – we can't even begi – I think there are probably some councillors can't even begin to see – I think most councillors struggle to see a life beyond their next election date.*
> - Nicola - councillor

'We' becomes 'some councillors', and then 'most councillors'. The issue of whether we can see an answer at all is glossed over. If it had not been, what followed might have been an admission of helplessness. It may be more tolerable to blame other councillors for short sighted self-interest.

There was general avoidance of the question when I asked if there were environmental or carbon reduction projects which had to be shelved due to other considerations, such as lack of finance. I heard a great deal about a small number of successful projects, 'showcase' projects one might almost say, in each area, but almost nothing about things which might have been but could not be implemented, as if thinking about political or financial limitations was unwelcome. The most concrete examples I was given were by a Director on the day before her retirement; and by another senior officer who had already retired, and from two officers in relatively humble positions in their respective hierarchies. Those with a greater stake in current policies evidently found it harder to speak about examples that might be considered failures or in any way regrettable.

Doing one's bit

Norgaard (2011) noticed that one of the ways people defended themselves against difficult emotions was to concentrate on the positive, to find something that one could do even if it was a small thing. There were several references among the respondents to 'doing ones' bit', often in the context of seemingly intractable problems. Jack, the Greenleigh councillor dismissed a worrying prospect in these terms:

> *A four per cent rise in temperature could occur in less than 50 years. Right. You could get run over by a bus tomorrow morning. It might happen….And if the scientists amongst us – and professors amongst us – are saying we have to do our bit, then we have to continue to do our bit, I suppose.*

This comes with a slightly fatalistic flavour, similar to his *'in 3,000 years we could be living on Mars'*, a sense that it is not worth the effort of taking any action beyond the minimum. This use of the phrase is different from where it might be employed to encourage a sense of agency and positive action. Rebecca, a councillor, moved rapidly from answering my question about her confidence in the future to an action frame of reference:

> *…. I wouldn't say I was confident that my nieces and nephews and other children are going to have a good future, but we have to do the best we can. And, you know, that's down to, the longest journey starts with a single step, doesn't it?... we're just about to sign up for a solar PV, there's people further up the street just having it done, you know, if everybody did that, it'd be a huge difference, wouldn't it? You know it's like when you do a charity collection, and people say, oh well I've only got loose change, and you go, everybody's loose change comes to quite a lot of money.*

As we discuss the issue of responsibility, a thread running through these comments is the hope and the doubt about whether other parties will 'do their bit' also. It cannot be denied that while pointing the finger can serve as a way of deflecting responsibility for action, it can also represent a genuine uncertainty about the results of action which is difficult to diminish or resolve; which doubt informs the reasoned choice of a 'game plan', to adopt a phrase from Rational Choice theory. The sense of having a limited degree of agency over the problem is, I believe, one of the central limitations on individual action, and upon the emergence of initiatives within local authorities on carbon reduction (this is discussed more fully below).

Comparisons with the past

It was in conversations which involved the future, and how people felt about the life that future generations might face, that respondents often referred to past challenges, comparing climate change to weather changes in the past, as in this excerpt:

> *Climate change is a long term problem. I do think climate change is. (pause) It's not a hoax- …. I think it is a long process. I think – I think to be perfectly honest, if you look past the centuries – I do, I love watching those programmes that are the way through the centuries that they go through. I remember my mother saying when she was a girl, that the Exe froze, the winters were so severe. You know, you could walk on that, and they had fairs on that Exe, and when you look at it you think, My God!* Charlotte, councillor

Another councillor, who had experienced economic deprivation herself as a child, said that although she felt that there would be difficult times for her children in the future, her parents had gone through many difficult times during the war. *'They managed because they had to….. I'm glad I'm not young today, but I feel they will manage in exactly the same way as we and our parents did.'* Bernard, an environmental health officer said:

> *And I would be very disappointed if we couldn't make an impact and do something positive. That's the modern agenda if you like. We've dealt with the choleras and the typhoids and those sort of challenges that society faced in the past, and we dealt with the big smogs in the cities…, and that's where I see us trying to have an impact as environmental health practitioners.*

These comparisons with times past, helped to assuage the worries that future uncertainties might present and place the issue of climate change in relationship to other problems that have been solved in the past.

Being 'realistic' or 'practical'

I have already noted one example of a respondent who described her attitude as 'realistic', counterposing this to a stance of worry or concern about the future. Again, I was told by Alan, another councillor that ''*the media have a huge role to play in this country – the media like the sensationalist headlines, like that,[the card statement], rather than a more measured approach about what is realistic'.* The statement about the possibility of a four degree temperature rise by 2050 made by a respected climate scientist, is certainly on the high side compared with other projections, but was described as sensationalist by the councillor and contrasted with a 'realistic' position.

One councillor, recounting that she had taken part in anti-nuclear power demonstrations when she was a student, laughed hectically as if it were an amusing early aberration. Laughter often seemed to illustrate the where the border to socially acceptable attitudes lay, embarrassment the result of going close to the edge. The consensus area, then, is one in which one does not take a passionate stance on environmental issues (though one can be passionate about food poverty or homelessness).

Being 'realistic' or 'practical' is often contrasted with being 'green'. This construction of 'green' is interesting and pervasive. It seemed that it was particularly women who reported feeling an element of sneer from a minority of councillors in being identified with the sustainability agenda. Statements

opposing being 'green' and being practical came from both genders. These comments are from two women and two men:

> *And to be fair in this case as well as any others I'm sure, there are some issues about green – fine – but actually in the real world..you know* – Jack, councillor

> *I'm not green, like some people who sit in the council, because I'm also practical* - Grace, councillor

> *I wouldn't say I am terribly green. What I'm trying to say is that I view it as more common sense than – trying to see all sides to it*. – Charlotte, councillor

> *They talk like this, they think 'Oh no, She's green' kind of thing. I do all these things..*- Beatrice, officer

This attitude can be associated with impatience with, or scorn for the 'fluffy' or idealistic stance of those who advocated more vigorous action on climate change. I have mentioned one respondent's positioning himself as 'hard-headed' in relation to myself, whom he saw as an 'environmentalist'.

When Charlotte broke off from a consideration of the future for her grandchildren to describe herself as realistic, I felt not only that she was avoiding a subject which could have evoked anxiety, but that, in contrast to her, I was being identified with an idealistic position which would not gain traction in the real world.

> *One thinks of their….but I tend to be realistic. How realistic is it – I don't know - you can only go with your common sense. I hope I've got some common sense. What are your views on nuclear then?*

The request for my views on 'nuclear' seems especially relevant in terms of Charlotte positioning herself in opposition to a view she would have regarded as idealistic or 'green'. Hoggett (2012) identifies such attitudes as 'pseudo-realism', embodying a discourse which draws on social Darwinism, and adopting a stance which is disdainful and superior in relation to another who is seen as naïve and unrealistic. The effect of this, Hoggett observes, is to 'discount the possibility of constructive human agency. While it passes itself off as realism it is actually fatalism' (2012 slide 27). All these norms and repertoires were observed across the political spectrum, particularly those that involved denying or denigrating a passionate response; however, in the frank versions I have quoted, they were more often found in councillors from the right than from the left.

5.3 Sense of Agency

Although most respondents agreed with the statement that 'our organization can play a part in responding to climate change', conversation revealed that many, if not most, are deeply pessimistic that realistic mitigation efforts can occur. They are aware that national government does not prioritise the issue. They tend to the view that even if the UK successfully meets its emissions reduction targets, other countries will not reduce theirs, and that carbon reduction hampers businesses without achieving any impact at a global level. They point, as we have seen, to large industrializing countries such as India and China, or some suggest that Americans are unlikely to cut their gas guzzling lifestyle.

Furthermore the sense of agency in local government to tackle problems of any kind has suffered as a result of budget cuts from 2011 on, and the unplanned changes it has enforced. Changes to the planning regime meant that powers they once had over development in their areas have become undermined by central government. This view is exemplified by Morris, a councillor in a rural district also subject to windfarm development plans.

> *Where I live I have never ever seen anything like it, springs breaking everywhere; the weather is going to extremes, there's something different happening. I don't think anybody denies that. But I think there's a feeling, you know, What can we do about it? And I say that, coupled with the jaundiced view of what the government have done over [large local windfarm, approved by the Secretary of State], I think makes people say, well it's somebody else's agenda, and they'll do what they like anyway.*

A rather fatalistic view is also reflected in the responses of Kate, councillor from a poor estate in a predominantly rural area. The first time I raise the subject of climate change, she immediately gave her response as if I had asked for her view on wind farms. The second time, a frightening TV programme was mentioned.

> *G: and what do you think about climate change, do you think it's worth worrying about*
> *K: Well I mean, put it this way, ….my daughter in law, she came to me, she goes, Devon ain't going to be around soon is it? Bless her – She'd been watching a programme on TV about it all going into the water, all the land, this is what she'd mowthered. And I said to her, 'D'you really understand that programme?' and she goes What d'you mean?. I says, it ain't going to happen tomorrow. You know, I said, You still carry on, even though it's happening. OK you can look*

into why its happening, and try and do a study and try and work out how to stop it, but don't go round telling everybody that Devon isn't going to be here.

When she considered the statement mentioning tipping points, Kate's response was '*No. It's a natural cycle. It's going to happen no matter what. I do believe that. It is going to happen, no matter what. Humans may try to fight it but they're not going to stop it.'*

David Ballard (2005) comments that pro-environmental changes to promote sustainable development require three conditions: Awareness, Association and Agency. His presumption that the preconditions needed to be fulfilled in that order was challenged during a six-month course for senior managers tasked by the CEO of their company to promote sustainability in their departments. He observed that only when they were already charged with their task and had a real sense of agency, and had developed sufficient associative relationships and safety within the study group, were these managers open to taking in more fully the findings and implications of climate science. He concluded that agency is a prerequisite for successful action, and that it might not be possible even to take in full information about climate change unless both this sense of efficacy and the strong and supportive group were already in place.

Reflecting on why councillors in Weirbridge might have a sense of commitment to the carbon agenda greater than in other authorities in the study, I recollected the way in which Alison, a senior officer, had hired a cinema, arranged a showing of the Inconvenient Truth (with popcorn) for officers and members; had talked about climate change as she placed objects in the time capsule to be buried under new development, and over a long period of time circulated information to councillors about climate change, and identified relevant conferences and trainings to which members were 'sent'. Clearly she was not the only senior person who contributed to bringing this agenda to the fore, but these actions may have helped to allow discourse about climate change to take place (especially, she said, when there were strong climate deniers in the room), and to create the sense of association which enabled information to be absorbed and the conversations about policy to be taken forward.

5.4 Attitudes to the Future

Table 6 shows the breakdown of respondents' comments on the card statement 'I am contented and confident that those who are now young will inherit a good future'. This was a useful question to

enable respondents to start talking about how they saw the future, and some quite strong statements emerged, both pessimistic and optimistic. Only three of the sample agreed with the statement

Table 6: Outlook on the future

Q: I am contented and confident that those who are now young will inherit a good future

	Agreed with the statement	Don't know or question avoided	Disagreed with statement
Total	3	4	23
No who disagreed there is not much an individual can do about climate change	1	2	18

Most respondents mentioned a variety of concerns, though the context was in a discussion of climate change. These included unemployment, the risk of world conflict, food and energy prices and living standards. One group tended to say things like this:

> *Not particularly. I don't think it'll be as – I think we're living in probably the best era I think (laughs) Well, I don't seem to have struggled financially or in every other shape or form, I think we've had the easiest time I think* – Miles, councillor

> *I think our generation have robbed our younger generation. I had free education, mandatory grants, good house prices* – John, councillor

Grace, a councillor, drew strength from the difficult times her grandparents and parents had lived through, including the wars and the depression, and hoped that the young people of today would *'manage in exactly the same way as we and our parents did*.'

Another group referred more explicitly to climate change. Comments in this group included

> *I'm very hopeful. I would like to be completely confident, yes. I would like to be. I don't know what the answer is to that. One feels very challenged at the moment, particularly with jobs and austerity and…which seems to have taken precedence over the climate change and those sorts of issues I feel in our public debate at the moment, and one worries, one worries a great deal, you know…. it just feels to me like we're on a slippery slope. You can tell I'm a pessimist'-* Bernard, officer

> *Contented and confident……. Rubbish. No, I'm sorry, I'm very, very pessimistic about my grandchildren and great grandchildren's future….. I believe immense change is possible, if the*

political will is there, and I don't see the political will. So I'm not encouraged, I'm depressed by the attitude of the controlling group, that so much could be done. – Gerard, councillor

I so want to believe that! (laughs). Whether I do or not, I'm not sure. – Annabel, officer

I wouldn't say I was confident that my nieces and nephews and other children are going to have a good future, but we have to do the best we can. And, you know, that's down to, the longest journey starts with a single step, doesn't it? – Rebecca, councillor

This group which answered pessimistically, paradoxically, tended to be more active within their sphere, and to have a high sense of individual agency, if this can be inferred from disagreement with the statement 'There is not much that one individual can usefully do about climate change'. Respondents in this group were also willing to admit to more intense feelings about the issue. The numbers are inadequate for statistical analysis but Table 6 indicates that of the whole group of 23 who did not feel confident about a good future, 18 believed that individuals (and therefore that they themselves) have some agency. Here again, one might hypothesize that a sense of agency allows the tolerance of more difficult information and a more feeling response about prospects for people in the future.

There is a complex of related factors here in which agency, openness to emotional responses to issues, undertaking individual action, participation in collective action, and attitudes to the future are bound up together, which we examine further in the following chapter.

5.5 Accounting for difference

Data from the interviews does suggest a degree of scepticism about the human causation of climate change and the importance or usefulness of mitigation measures in response. It was also clear that there were systematic differences between the two case study areas, the prevalence of climate change dismissal being much greater in Greenleigh than in Weirbridge. Several factors were potentially associated with this difference: political party of the administration, rurality, wealth/poverty, and topography. Since these factors all coincide, differences in attitudes cannot be securely attributed to any one of them. Weirbridge is urban, Labour controlled, has very limited scope for wind turbines, and its population is relatively wealthy with low unemployment. Weirbridge's budget greatly exceeds that of Greenleigh, the area with lower incomes, higher unemployment, dependence on tourism and retirees, and a Conservative administration.

The attitudes of some councillors in Greenleigh were the result of representing people living in a relatively high, sparsely populated, pretty place. Because wind energy companies sought developments in the area, campaigners against wind turbines from within and outside the district influenced the attitudes of some councillors, both conservative and liberal democrat (the opposition), not only increasing their scepticism about the energy generated by wind turbines but about climate change in general. This seemed also to be the case in two other districts studied with comparable geographic suitability for wind generation. The interviews confirm that in Greenleigh, councillors from all political parties, even those sympathetic to the need for renewable generation, were influenced in the way they voted by the anti-windfarm campaigns. It would seem from this that direct community political activity, rather than merely demographics and geography, was at least partly responsible for the differences in attitude between the two authorities.

Therefore the data from other local authorities were examined to see whether they yield further insight into the relationship of attitudes to various factors.

Table 7 Rurality and Climate Change Dismissal

Local authorities	Influential Scepticism about human cause or explicit rejection of importance of climate change	Predominant practical acceptance of need for action on mitigation
Urban	0	2
Mixed urban/ rural	1	1
Predominantly Rural	2	1

Table 8 Rurality and the nature of carbon reduction initiatives

Local authorities	Carbon reduction restricted to cost saving	Independent initiatives at carbon reduction even if extra costs incurred; and in business/community in area of jurisdiction*
Urban	0	2
Mixed urban/rural	2	0
Predominantly rural with coastal and market towns	3	0

*Excludes implementation of central government home energy efficiency schemes

Table 9 Political party of administration and nature of carbon reduction initiatives

Local authorities	Carbon saving restricted to cost saving	Independent carbon reduction initiatives
Labour	0	2
Liberal Democrat	2	1
Conservative	4	0

Tables 7 – 9 require judgements about the overall prevalence and importance of scepticism in relation to the human causation and importance of climate change (Table 7) and about the overall nature of carbon reduction initiatives within a particular authority (Tables 8 and 9). Nevertheless Table 7 makes clear that in the limited number of authorities in the study, those which were wholly rural were more likely to have a degree of climate change dismissal which discouraged or prevented some carbon reduction measures, both within the authority's estate and renewable installations in its area.

Even more clearly, it emerges in Table 8 that the carbon reduction measures which were adopted in all but the urban areas were restricted to those which resulted in cost savings. In the rural areas, carbon reduction initiatives with net financial costs (calculated over time with a high discount rate), or aimed at businesses and communities, were absent.

Table 9 gives information on carbon reduction measures by the party controlling each authority. There are more cases because some councils are represented twice, for different time periods, having experienced changes in the controlling party in recent years. Historic Liberal Democrat administrations are therefore represented in the table in addition. Here again, it was the larger urban areas with Labour administrations at the time of study which adopted wider climate change mitigation policies, some of which involved expenditure not recouped. The one Liberal Democrat council which did likewise was also in a wholly urban area. The rural Libdem councillors were more reflective of their constituents from whom, the interview data suggests, they would hear that climate change was not a major concern whereas desecration of their view of the landscape was.

To understand the coincidence of factors more fully I examined the one outlier case: the rural district where there appeared to be a general acceptance of the need for action on mitigation. This district, let us call it Millerton, has a Conservative administration, is described as 'not very political', and many initiatives are officer-led. Millerton's topography is undulating with low ridges with some areas of fertile land, and settlement is more dense than Greenleigh. There are three unpretentious market towns with populations below 20,000. Two of these towns are within commuting distance of a large city and road and rail communications are better. It has no coast and is more dependent on farming than tourism. Millerton managed to get its refusal of one large windfarm application confirmed at appeal, but has accepted applications for many smaller wind turbines (average 25 – 35 M in height, mostly one per farm) and a number of solar farms, which are beginning to be contentious and would probably have been rejected in Greenleigh.

Millerton council has been more systematic and proactive in pursuing energy efficiency in its own estate and council housing than Greenleigh, following an interest from members as well as officers. All its council housing was surveyed and solar panels put on suitable rooves before this happened in Weirbridge. Leisure centres have combined heat and power plants, and ways of recycling surplus heat were being examined. It was regretted that investment in energy efficiency would be curtailed by cuts, so the outcome of this was unclear. In 2012-13 Millerton had achieved a reduction in its electricity use over the previous year, but an increase in gas due to a hard winter, resulting in a small reduction in greenhouse emissions overall.

The main difference between Millerton and Greenleigh appears to be that the former is landlocked, has less dramatic scenery, and therefore less attraction for both wind developers and middle class retirees. Political debate appears more muted; and the predominance of farming interests may have induced sympathy for smaller wind developments and for solar farms, boosting farm incomes in a period which has been economically very challenging.

One of the towns in Millerton also had an active Transition initiative, which was seen as non-political and based on community concerns. Council officers and members took part in two half-day workshops run by this community group on reducing dependence on fossil fuels. Accounts differed about how influential this group was, but at least it seems not to have been divisive and to have been welcomed by some. Thus although Millerton council did not pursue ambitious mitigation policies in its area, and action in its own estate had to be financially justified, its electorate and its internal culture seemed more favourable to maximizing opportunities for reducing greenhouse emissions and to renewable generation.

Thus the fact that action to mitigate climate change is less contentious in Millerton than Greenleigh seems once again to be due at least in part to geography, the fact that it is lower and less pretty, and the effect this has on its socio-political make up; but perhaps also to an attitude of pragmatism, response to farmers' interests, letting skilled officers get on with things, and an atmosphere in which the existence and human causation of climate change was not so controversial.

5.6 Conclusions to Chapter 5

Here we have looked at the techniques and social conventions of discourse which have the effect of distancing the respondents from the issue of climate change and from responsibility in relation to it. In the following chapter, I look in more depth at the purposes which these norms and techniques fulfill within local government organizations and society at large, whether they are a crucial obstacle to effective carbon reduction or whether they are dependent variables in this larger configuration of political and social factors.

There are many common features in culture and attitudes between urban and rural areas, but some of the distinctive and systematic differences appear to reflect profound differences in attitudes within communities in urban and rural authorities. The 'half-way' characteristics of Millerton lend additional support to the view that these differences are related to the way topography and scenery have affected the local socio-political make-up, as well as to councils' internal culture and to particular local political circumstances.

Chapter 6 Discussion: Attitudes, Culture and Context

In this chapter I begin by reflecting on the implications of the findings of the interviews and case studies for the research questions. In relation to the first research question concerning the role of subjective factors, the study is able to show, by a combination of attitudinal data and research on specific practical and policy outcomes, that individual attitudes and corporate culture are important both in enabling carbon reduction proposals to come to birth and in slowing or speeding their progress towards acceptance. This method has not been used in prior studies. I also illustrate, in relation to the second question, the prevalence of climate change denial and dismissal in individual attitudes and how this is manifested in organizational culture. I then discuss what can be inferred from these findings about the underlying theories; and about the role of external pressures and internal constraints within authorities. Finally I attempt to draw out implications for leadership on climate change issues, and to relate the discussion to policy, both at local and national level. To recap, I reproduce here Figure 8 which classifies the various influences considered:

Figure 17: Influences on Local authorities' response to Climate Change mitigation policy

1. Individual subjective factors (values, beliefs about climate change, party allegiance, worldview, defences)	2. Individual objective factors (age, knowledge about climate science, awareness about policy alternatives, technical skills etc)
3. Collective subjective factors (culture within authority, shared norms and epistemic positions; fragmentation, lack of communication or varying norms between departments)	4. Collective objective factors (central government regulation, statutory obligations, financial limits and incentives, political 'steer', economic climate; local public pressure and vested interests)

6.1 Individual subjective factors: attitudes to climate change and carbon reduction

6.1.1 Seeing the point

Acceptance of the main findings of climate science was the norm among officers and the majority of councillors interviewed. Commitment to carbon reduction was more than a formality among many of them, and it became clear that much of the progress actually achieved in carbon reduction has been

the result of steady work within authorities, some predating and anticipating central government policy. The fact that there have been many obstacles does not imply that achievements have been negligible, and many examples are given in Chapter 4. Measured greenhouse emissions for council activities, where they are available, have generally fallen, but it is not always possible to distinguish the impact of policy measures, achieving efficiency savings and renewable generation, from that of expenditure cuts in explaining declining emissions.

It is also the case that emissions reduction measures or the lack of them may have an almost indistinguishable impact on a local authority's carbon footprint, compared with other influences such as the acquiring and disposal of premises, staff numbers, the energy efficiency of leased properties, weather of course, programmed building and refurbishment, cost saving measures, and investments undertaken for other reasons. The outsourcing of different services over time also makes inferences about the impact of carbon reduction measures virtually impossible. The strongest evidence of success is where emissions per pound spent have fallen (for example in Devon County Council).

6.1.2 Influence of Climate Scepticism

The second research question concerns the existence and formation of climate change denial. **There was also evidence from within the interviews, as well as reported evidence, for extensive climate change scepticism and dismissal. Possible reasons contributing to this emerge in Chapter 5 and are discussed below**. **Though in many councils sceptics are in a minority, this does appear to deter some proposals for carbon reduction investment. The strongest evidence for this came from Greenleigh (see Chapters 4 and 5), an area suitable for wind energy generation, and it seemed that attitudes to climate change were very much interwoven with individuals' opposition to or support for wind turbines. There is a degree of organized denialism in the anti-wind turbine campaigns which has undoubtedly influenced the arguments advanced for refusing planning permission to windfarms and the views of some councillors about climate change.**

6.1.3 Climate Change Dismissal

Much more typical than either of these positions is the view that although climate change is a genuine and anthropogenic problem, there are far more vital things to worry about. Climate science

is not the issue, I was told many times. Spending cuts, poverty and unemployment, rural isolation are the issue, accompanied by half a dozen more headaches with much closer deadlines. The more senior the respondent, the more heavily responsibility for budgets weighed; and the short term worries, including the prospect of having to carry the blame for cuts and redundancies, or being made redundant, seemed to crowd out longer term issues.

This is not quite disavowal, as Weintrobe (2013) describes it, but there is a kind of survival anxiety involved: anxiety about personal survival in the job of councillor or officer; about party and administration survival (particularly for Liberal Democrats); and for the ability of constituents to keep their head above water when unemployed or suffering benefit cuts.

These national issues belong more appropriately in the section below dealing with external influences upon councils' policies and how they carry them out. However it is noteworthy also, that they appear in conversations not only as respondents speak regretfully of the limits on what they can attain, but also among a list of several factors which explain why there is little point in undertaking steps for climate mitigation beyond cost reduction.

These reasons tend to be articulated not as a consistent position but in a rather hand to mouth fashion, mixing uncertainty about the science with pessimism about international agreement and the futility of British action, dismissal of the idea of tipping points, optimistically long timescales for climate action, lack of funds and short payback periods for council investment projects. There is no doubt a widespread lack of information on some of the more secure findings of climate science – but it is unclear whether further dissemination of information would make much difference to those people whose trusted sources are the Daily Mail, the Telegraph and constituents concerned about wind turbines. A few respondents who were committed and effective in promoting relevant carbon reduction policies were equally vague about timescales and temperature increases, because, as one said *'I don't do figures'*.

The attitudes found in this study certainly give support to theories of denial, as elaborated by Norgaard, Stoll Kleeman, Hoggett and others. A close reading of the interview material with a psychosocial perspective reveals some strong evidence of what Rowson (2013) calls 'stealth denial' and Cohen (2000) 'interpretive' and 'implicatory' denial, acknowledging in some degree the

existence, and in most cases the human contribution to climate change, but denying the need to get too het up about it. The dimensions of denying emotions, responsibility, and agency for action are discernible. Discursive repertoires appear which are linked with disregard either for climate change as an urgent problem or for the possibility of action to combat it. Statements are made which, I have argued, are better understood as strategies for maintaining a positive self image or justifying a worldview or ideological outlook, than as expressions of belief or ignorance. Bearing in mind Weintrobe's analysis, we should not be too surprised, therefore, to find that the underlying anxieties are not fundamentally assuaged, and emerge even more strongly when respondents are talking about the future which their children or grandchildren's generation will inherit.

6.2 Individual objective factors: skills, knowledge.

These are hard to separate from those factors listed as subjective, but there are matters of technical knowledge and policy competence which seem to be lacking within some local authorities; understanding and tracking the implications for carbon emissions of planning decisions is sometimes ignored. Sometimes attention is paid to providing new employment land close to residential development, to minimize the need for transport, but the implications for carbon emissions of the type of developments and their environmental standards of construction are not considered.

Some microgeneration projects particularly early ones, have been relatively unproductive, often wrongly sited and carried out without fully exploiting opportunities for reducing carbon through energy efficiency. These types of mistakes are less likely to be repeated these days. However most councillors did not know whether their council emissions were going up or down, and even among officers it seemed that the only ones who knew were those whose job it was to keep track, when comparable figures were available (not always the case). No cash hangs on these figures so they seem not to be much discussed.

We may conclude that there is much here which substantiates the concept of 'bounded rationality': that, within their capacity for attending to and processing information about the issue, local authorities are dealing with the carbon agenda; but opportunities are missed partly through lack of capacity to link one thing with another or to follow the implications of numerous and sometimes conflicting policy imperatives. Often it is as Lipsky describes (1980), bureaucrats are managing

resources (including time – now very scarce in local authorities after several 'restructurings') in situations of conflicting priorities and multiple demands. The result is that priority is given to matters which bear on their personal survival in the short term, either as budget managers or elected representatives, rather than public wellbeing in the longer term.

6.3 Collective cultures

Developing a coherent response to the dilemmas posed by climate change is a demanding task for an organization, and it is no more surprising that local authorities often do not achieve this than that individuals manifest contradictions in their behaviour towards the environment. Many individuals both care about the earth, its creatures and the future conditions of human existence, and yet feel bound to conform to social norms which proscribe discourse on subjects which raise unpleasant emotions; or consumption norms which take no account of wider social and planetary needs. A group in a Transition initiative in one of the study districts met to support one another in changing their consumption patterns. The need for support was felt because they experienced the difficulty of lifestyle change, particularly in ways which ran counter to the social milieu: staying out of debt; approving one's appearance without the latest fashions or accessories; preparing food together with seasonal ingredients; resisting and deconstructing advertising messages and so on.

One of the findings in this study is that, as is probably the case in the wider population, people sometimes fall back on rather minimal, and in some cases tokenistic gestures of concern. It is not uncommon to find people explaining that they are environmentally conscious, carry out recycling and minimize their use of packaging, before going on to tell me about routine Latin American or Asian holidays, without an apparent sense of contradiction. Acknowledgement of the dilemmas that climate change poses seems to be quite a difficult matter and individuals' ability to do this depend heavily on a social context and the availability of cultural resources to help with this process. If individuals find sustainable lifestyle choices problematic, we will not be surprised that organizations do not always speak with one voice on climate change policy. This is true of local authorities, as of central government, that in some cases the right hand (viz the Treasury) does not know what the left hand (perhaps Defra or DECC) are doing; or else they do know but disagree (the reduction of 'green levies' on energy companies perhaps falls into this category).

Local authorities are sandwiched between central government which, as we have seen, issues ambiguous signals, and a public who are also ambiguous and on the whole passive, generally becoming mobilized only on issues with a direct and short term personal or local impact.

It is against this background that we find that there is an extensive range of strategies and tactics for organizations such as local authorities to remain in denial about climate change even while individuals or departments prepare to deal with it. These include (as noted in chapters 4 and 5) splitting off responsibility and assigning it to a particular department, often Environmental Health, without fully taking on a cross-cutting commitment; burying or putting relevant items at the end of agendas; subsuming it in another task; vagueness; keeping targets distant in time. Budget cuts and job losses have contributed to the compression of carbon reduction into other jobs with tighter timescales or reporting obligations. (In an interesting parallel, I was told by a University sustainability manager how, in a time of restructuring and budget cuts, it can be very difficult to get people to focus on "fringe issues" like carbon reduction, unless there is a strong business case. The processes observed in local authorities may be representative of a wider range of organizations).

General features of local authorities, such as short term-ism and risk aversion militate against serious strategic efforts and investment in carbon reduction, even where these might have a beneficial impact upon budgets, and have been exacerbated by financial austerity. There were also accounts of foot-dragging by officers who did not agree with adventurous policies. Respondents' reports concurred with the observation of Morstein Marx (1957) that bureaucracies favour bureaucratic personalities through selection, attrition, training, and a career ladder in which errors (according to local codes of practice) damage promotion prospects far more than inaction.

Parallels can be observed between central and local government. Pascal Lamy and others have bemoaned the lack of long term vision in national governments (Oxford Martin Commission 2013), recommending an alliance of the G20 and top cities to combat climate change, in order to address the collective choice issues which inhibit individual governments and authorities from tackling the issue. National governments, too, are not immune from short term-ism and risk aversion.

Interview data provided many examples of social norms and repertoires which help to normalize the issue or to downplay its importance. These include the primacy of the business case (an important tool for reducing conflict among councillors with differing political commitments), and of economic discourse in general.

Councillors tended to interrupt a discussion on climate change by going off at a tangent, or to frame the issue as a 'green' concern, with the implication that this was either emotional or idealistic, counterposed to being 'practical' or 'realistic'. At other times climate change was compared to previous crises with which respondents or their parents had had to deal (such as the war). Sometimes the general picture was avoided by concentrating only on the local aspect, such as building on flood plains, manifesting what Norgaard (2011) calls the 'tools of order' – techniques employed to achieve reduction of anxiety about an existential threat. Norgaard refers also to the 'tools of innocence', justification of inaction by blaming others – the Americans, the Chinese and Indians, national government, the EU and so on, and these justifications were employed extensively. The term 'tools of innocence' seems appropriate here, but not in relation to respondents who, more in sorrow than in anger, regretted their inability to make more of a difference but still accepted some responsibility.

The types of discourse which justify inaction, particularly, seem designed to denigrate those who take responsibility for a wider society or societies rather than focusing first and foremost on the interests of the local population. Being 'green' is treated rather as if one prefers the wellbeing of strangers to one's own kith and kin. This attitude may reflect the undesirability of facing the urgency of the issue and the feelings which would be connected with the reality of climate change, perhaps the anticipation of losses. In addition it seems to reflect the sense of powerlessness from the widespread perception that action on a local basis is of limited value in mitigating climate change, whereas adaptive measures can be expected to improve matters for local constituents.

The import of these findings is that local authorities are not perverse organizations, in Long's and Hoggett's terms (Hoggett 2013a). It would be hard to characterize the view of the world as virtual reality. Perhaps the exaggerated importance given to monetary magnitudes such as GNP or regional 'economic growth' do demonstrate an inordinate belief in abstract constructs as descriptions of reality, even though they acquire currency because of the assumed connection with things that

matter profoundly, such as employment opportunities or wage levels. But there is little evidence of conscious collusion to deny or disavow climate change. The mechanisms observed in this study more often involve unconscious collusion to ignore it or dismiss it. Again, it is not so much evidence of selfish pleasure as ensuring survival in ones role as a bureaucrat or elected member - self-interested, to be sure – but often not unaware of the interests of others. Rather, respondents were probably hyper-aware of the financial straits in which recession has left some of their constituents and businesses and conscious of being held to some extent responsible.

6.4 Collective objective influences

Turning now to more objective factors in the wider social milieu, I review the findings on the relative influence of policy and regulation at a national level, and of local public opinion and pressure.

6.4.1 National government

Both national reports on the actions of local government and the findings of this study confirm that there is great variation in the way different authorities have approached carbon reduction and in their achievements. The influence of central government policy is very strong in many ways, but does not entirely mask the effect of other factors, such as the importance of corporate culture, or indeed, individual initiatives arising from strong beliefs, although it can often mute the impact of these initiatives.

However there is also considerable evidence in the interviews that many councils do not perceive it as in their interests to engage in carbon mitigation for their district, city or county, a view consonant with the rational choice approach. The impact of central government policy has shaped incentives in such a way that their interests lie primarily in short term reductions in their own energy use and not with longer term investment to cut energy needs, decarbonize their energy use or secure emissions reduction by households and in the private sector. The implication is that to bring about effective mitigation of climate change at a local level requires central direction or co-ordination, not least because the outcomes of the policy are national and global, and, unlike adaptation measures, will not primarily yield the advantages at local level which would propel action.

Local authorities' scope for action is in any case extremely and increasingly limited by central government policy. National policy, in its faltering commitment and emphasis on spending cuts, undermines independent motivation for carbon reduction, increases councils' risk aversion, and shortens time horizons thus curtailing investment in a low carbon economy to the very short term. Further, the changes to the planning system increase the risks and reduce the leverage which local authorities might have to negotiate greater environmental sustainability for new development, while the financial incentives of developer contributions and the New Homes Bonus make it almost inevitable that cash strapped local authorities will promote building of every kind regardless of its impact on greenhouse emissions.

6.4.2 Prices and technology

The extent to which financial stringency affects local authorities and incentivizes energy-saving measures depends also upon energy prices (and therefore, fuel taxes) and upon advances in energy-saving technology. Such changes as the declining price of solar panels also put some renewable generation installations within reach which might formerly not have been considered. It is beyond the scope of this study to investigate the background to these changes. I merely note that energy prices are one of the factors which mediate the impact of other national policies, and which, though partly determined by supply factors, depend also on the carbon price floor, fuel taxation, and policy concerning energy markets.

6.4.3 Public pressure

The influence of public pressure upon local authorities appears to be much slighter in our area of study than that of national government, a reflection of the way in which government in the UK is centralized to a much greater degree than in many other European countries. Only in the opposition to wind turbine applications have there been cases where a local outcry has been sufficient for councils to overrule their officers' advice and reject applications in defiance of central policy and planning guidelines. In at least one such case, the district council lost at appeal. Nevertheless, the public opposition is likely to have deterred some applications and to have conditions placed on others.

Only hints about any public support for carbon reduction measures could be discerned: one officer dismissed the possibility that decisions were influenced by the local sustainability group, while a councillor in the same authority suggested that this influence was felt and significant in 'keeping us up to the mark'. A highly respected and experienced environmental advocate in one city had considerable personal influence. However many comments suggested that perceived public concern about environmental matters related chiefly to cleansing and rubbish collection.

6.5 Policy implications of the research findings

Many of the comments recorded refer to these perceptions of the strong influence of national policy, even while recognizing the potential for more effective measures to be taken by local authorities in the present situation. What follows is an assessment of the policy implications of the research findings, illustrated with a selection of statements from the interview data.

In relation to national policy, the most significant changes which would encourage or remove obstacles to effective carbon reduction measures appeared to be access to funds for low carbon investment, changes to planning criteria and the often repeated '*Just being given a clearer steer from government*' (officer). These are changes suggested:

- A return to more significant reporting requirements*. 'I think there's been too much of a backlash against targets. Things got silly under Labour, but now they've gone too far the other way. We've abandoned national indicators altogether.*'(Spencer, officer)
- Focussing funds available for infrastructure investment from central government more on investments which result in emissions reduction. Bidding for the fund would be conditional on this. *'So I think if there were some sort of infrastructure Fund, that the government could provide, that could be borrowed from, or accessed in some way, that would make those – well, we're wasting, we're not taking opportunities which we could take'* – Kenneth, officer
- A long term perspective, accompanied by Treasury discount rates which reflect a higher valuation of future benefits in a world of energy scarcity. At another level, a long term perspective is needed to assess and pursue benefits which cannot be realized through the processes of the market, or the proto market mechanisms used to guide public investment.

'*At some point we have to live on the same amount of energy the sun sends to us every year'.* John, councillor

- Greater encouragement for low carbon industries and supply chains, both by procurement policies and central financial incentives. *'There has to be an acknowledgement that there have to be incentives, for the industry to develop. It has to be built up and capacity has to be grown and all that. It won't happen without some sort of feeling of confidence and certainty which is increasingly difficult to grasp at the moment.'* – Alison, officer
- Maintain progress towards building development which is zero carbon in operation. Building regulations were set to make new housing zero carbon by 2016, but this policy has now been relaxed. An alternative would be to meet the passivhaus standard, which might be a less expensive way to achieve the same objective. Social housing projects in one authority will now all be built to passivhaus standard for the same cost as housing which meets current building regulations. (Some examples of such projects are given by Gale and Snowden 2011, Gale 2013).
- Incentives for the development of energy sources are not balanced by incentives for demand reduction, a point made bitterly by one opponent of rural wind turbines and solar farms. Improved terms for measures such as the Green Deal might improve uptake. '*There's a lot of poorer people that won't take it up – the ones you really want to get to… So without direct grant funding to actually tackle the problem….'* Michael, councillor.
- Local autonomy over business rates would allow authorities more control over their own budgets and to raise funds for investment. '*it would be great to I suppose to have a more flexible approach, so that you could increase spending on housing if it is going to be for the long term benefit of the environment and the people who live there'* Rebecca, councillor.
- Revisions of the National Planning Policy Framework (NPPF). While planning departments consider the reduction of emissions in spatial planning, greenhouse gas reduction appears not to be a prominent criterion for approval of applications. Even councillors wishing to prevent building on flood plains found themselves unable to do this in the face of developer pressure and the strong presumption in favour of development embedded in the NPPF. There needs to be a more meaningful operationalization of the sustainability criterion in the NPPF, with clear indications of what grounds for refusing applications would be sustained on appeal. Otherwise planning departments will continue to prioritize development and local economic growth whatever the impact on carbon emissions. This would need to be

accompanied by appropriate financial changes. At present councils are incentivized by developer capital contributions to accept unsustainable development, do not have other comparable sources of capital, and are liable to be penalized for opposing applications on grounds of environmental sustainability.

A more general point raised by several respondents was that nudge-type policies and incremental measures do not achieve the step-change in greenhouse emissions which is needed to meet the statutory targets. Early in the research study there was criticism of the then current government information campaign. According to Jeremy, an officer: '*What it's trying to do, Act on CO2, it's apologetic to the public. I don't want to worry you much, but if you do this little thing and that little thing and that little thing, we'll be all right, but actually we won't….*'

There were also suggestions from respondents which, they felt, would result in more effective carbon reduction within councils and in their areas, which are summarized at the end of Chapter 4. These suggestions indicate that creative and positive ideas for further initiatives exist in many authorities and could progress further if resources were available and/or the policy context gave greater weight to carbon reduction.

Beyond these particular changes, our discussion of cultures of denial has highlighted the need for changes of a cultural and social nature. Such changes are perhaps more subtle and difficult to identify and describe, and views differ widely on how to promote more favourable cultural attitudes to working on climate change mitigation as well as on local coping measures promoting resilience and adaptation. Rowson (2013) has noted that the sense of agency is important not only in relation to individual changes in behaviour, but views of national agency are also relevant to public opinion and policy debate; and that therefore more widespread information and clearer understanding about the progress made in other countries on carbon reduction, and on policy dilemmas in other nations, may widen the options considered in international negotiations and in climate change policy in the UK . This is discussed more fully below, with respect to communication, leadership and work for change at a cultural and social level.

6.6 Can positive factors outweigh obstacles?

Returning to the question we asked at the end of Chapter 1, about whether positive factors must be present in all four of the Wilbur/Reason quadrants to ensure active pursuit of environmental innovation (or in this case, proactive carbon reduction), we can see from our data, and particularly from the case studies, that this is not entirely so.

In the early 2000s, an adverse corporate milieu involving extensive climate change scepticism and dismissal was experienced by two part time sustainability officers appointed in Greenleigh, a small and rural district in the South West. Their employment was the result of an initiative launched through Local Agenda 21 (a process which initiated pro-environmental projects and procedures in many districts in the late 1990s and early 2000s). In Greenleigh, policies were proposed, discussed and agreed, but not implemented. Achievements were minor and at the margins. In this case it seemed that an adverse corporate culture, the attitudes of powerful individuals and lack of incentives from central government prevented progress being made.

A decade later climate scepticism and hostility to windpower was strong among some councillors and there was no universal enthusiasm for 'green' measures, but the impact of central government policy and the advent of the Feed-in-Tariff, rising energy prices, the 2008 financial crisis and budget cuts, had lent powerful financial arguments to those promoting energy efficiency measures and PV installations on the council's own property. External influences, to a large extent, trump collective culture and individual subjective factors, as long as there is the seed of individual endeavour to put the relevant arguments. The main such influence is central government policy, both regulations and incentives, and the indications given by changes in energy policy, targets for decarbonization or the lack of them, the encouragement given to fracking and so on. As Rowson finds (2013), the public are unlikely to change behaviour, and businesses to commit to low carbon investment, without clear policy and action from government; but the government will not act without public pressure. This puts the onus for change on the national public and political process, rather than the local.

In terms of our quadrant analysis of influences, therefore, the ability of local government to promote the low carbon agenda would depend not only on positive skills, good information, and financial and regulatory incentives, but also on national policy, including the degree to which councillors can see

how the actions they take fit into a national and a global picture in which the steady progress towards a six degree world can be arrested. National policy can resolve the collective choice dilemma which arises from observing the very patchy commitment to reducing carbon emissions in local government; but a constructive attitude towards international measures (such as obtained during the period 2006-9 when the UK took a very active international role) and/or an awareness of the mitigation efforts and progress with renewable energies in other non-EU countries would be required as well.

At present, the UK has tended to act as a retardant on some key mitigation proposals within Europe, attempting to preserve the market for the products of Canadian tarsands (Vidal 2013), and opposing mandatory national targets for renewable energy (Peter 2014). This stance has had rather the opposite effect of undermining the credibility of collective EU action to encourage international commitment to climate change mitigation. So far, the EU has played a constructive and proactive role, and without the initiatives from the EU the tortuous process of international negotiations on climate change under the UNFCCC would have achieved even less than it has.

I am not suggesting that global mitigation efforts depend solely on the actions or promises of governments; if anything, the reverse, that reciprocity in the efforts of sub-state actors – federal states, regions, cities, civic society and the like – eventually begin to carry forward national elected representatives. But making agreements between governments and realistic efforts to procure them in the face of very real resistance from vested interests is an essential ingredient in progress on a global scale.

6.7 The role of individual attitudes and collective subjective factors in decisions

Do subjective attitudes matter? The answer to this question depends partly on whether agents within local government have latitude to make and influence decisions independently of structural constraints. Or - the alternative view - are those in this study trapped, like the Easter Islanders perhaps, by structures and social conventions in a developing tragedy?

In relation to the first research question concerning the role of subjective factors, the study shows, by a unique combination of attitudinal data and research on specific practical and policy outcomes, that

individual attitudes and corporate culture are important both in enabling carbon reduction proposals to come to birth and in slowing or speeding their progress towards acceptance. Decision-making in local authorities, as shown in Chapter 3, is often diffuse. Though ruling party leadership can have a decisive influence, initiatives often originate in lower echelons of officers or members and have to pass through various hurdles to reach approval and implementation. A comparison between authorities shows that although there are many common factors, reflected in the analysis above, there are considerable variations in the way policy on climate change mitigation is approached.

For example in Greenleigh and two other rural authorities scepticism and uncertainty about the speed and causes of climate change were more frequently in evidence and were associated with reports of shelved initiatives, and reluctance to advance proposals without a cast iron business case. Proposals for wind generation were avoided, even for the benefit of the authority. Such attitudes appeared to be at least partly related to hostility to wind turbines among a section of the public. The opinion-formers in this trend of public sentiment were inclined to encourage scepticism about climate change as more favourable to their arguments, and the existence of public hostility discouraged discussion of further wind and renewable generation, even among personnel who privately accepted the need for this.

In contrast, in both the larger urban authorities studied, climate change was an acceptable topic for discussion and carbon reduction part of council discourse even prior to the introduction of specific targets and reporting requirements by central government. The attitudes of senior councillors in both authorities brought climate change policy firmly onto the agenda and initiated systematic carbon reduction plans. In Weirbridge the evaluation of alternative carbon reduction options by one senior executive led to a plan for reducing the climate impact of new housing. In the same authority, the interview data highlights the how acceptance of the findings of climate science was more complete, and responding to climate change seems to have been less contentious, even though disagreement about climate change remained among councillors.

Councillors change more regularly than officers and so their influence can prove more short term. In most authorities the cabinet, or group of portfolio holders among the members, determines the major lines of policy but this can be carried on over many electoral periods by officers – or not if its political salience declines.

In terms of the quadrant analysis, I argue that no one sector can entirely rule out the impact of factors in another. The importance of the factors in the various quadrants is therefore something of a 'more or less'; absence of propitious circumstances in one quadrant can greatly inhibit but seldom entirely stifle the uptake of new initiatives and creative policy innovations. Absence in two or three will provide formidable obstacles to progress. Thus one of the study's findings is that subjective factors (Quadrants 1 and 3) interact with objective influences (Quadrants 2 and 4), to produce a greater or lesser effect depending on the strength of these contextual or internal practical and objective influences.

To illustrate how individual attitudes do influence decisions and make a difference to outcomes, it is instructive to look at two examples. A senior councillor like Gerard, in a mixed urban/rural area without much backing from other councillors and in the presence of an corporate culture which was on the whole unsympathetic, could continuously raise issues and questions on biodiversity, farmers markets, landscaping policy, major road transport schemes, local food, energy generation and so on, sometimes forming a minority of one, but ensuring that environmental objectives are not forgotten, and sustaining his batting average over a long career. Gerard is well- armed with research findings, facts and figures, and maintains links with local sustainability and Transition groups. The officer who oversees carbon reduction measures attributes the success of some of his initiatives directly to Gerard's advocacy and persistence. In contrast Alison, a director in a council with some commitment to climate change policy, enabled and prompted others to develop their views. By constantly circulating and enabling access to information about climate change, 'sending' councillors on courses and in a variety of other ways, she was able to facilitate conversations about climate change, and so affect the culture surrounding policy discussions that, despite disagreements about climate change, carbon reduction measures were relatively uncontroversial.

6.8 Limitations and wider relevance of the study

The study is limited both in its geographical spread and, because of the small numbers interviewed, in its ability to represent the range of circumstances and influential factors within the authorities studied. There were 39 respondents in 7 local authorities. These were largely, but not exclusively, individuals whose roles connected them in some way with environmental matters, and climate

sceptics and 'dismissers' were in all probability under-represented in the sample. However the qualitative findings I believe stand even though the representation of sceptics and dismissers in the sample is low.

This does not in itself detract from the validity of the information given by respondents about activities in their authority and influences upon it, but greater representation of individuals hostile or indifferent to climate mitigation would have given a more representative balance in the account of attitudes within these authorities. In my research method I would have needed to conceal more successfully the focus on sustainability and carbon reduction to be able to interview more of those opposed to mitigation policy and to achieve a more balanced range of interviewees.

Having said this, the conclusions about the extent of climate change denial ('stealth denial' in Rowson's 2013 report) are strengthened rather than weakened by this imbalance in the sample. If the implications of climate change – the potential rate and scale of change and implications for action - appear unrecognized in a rather motivated group, this trait would likely be stronger or more prevalent in a representative sample of local authority personnel.

The findings were also affected by the necessary limits on time and engagement with subjects. A greater commitment by respondents would have been unlikely and could have reduced the response rate. However respondents in varying degrees limit what they tell an interviewer, particularly in relation to subjects which may elicit judgements, exposure of ignorance, or feelings of anxiety or guilt. Analysis using psychosocial methods has been used to attempt to understand affect and meanings which underlie verbal statements, but these methods could perhaps have been used more successfully and achieved a greater depth of understanding with longer or repeated interviews.

The conclusions about the relative strength of different influences would have been much stronger in a larger and possibly in a quantitative study. The present findings can only give an indication of the relative roles of the permissive and obstructive factors in the four quadrants, the four types of influences which could be the subject of further research. Further, these findings are valid only in the context of very specific local circumstances and in a very specific time period and institutional setting, so their generalizability is not great.

There is one exception. Many of the findings in this study concern national factors which necessarily affect local authorities in areas of the UK other than the South West at this time: financial pressures increasing the salience of cost and energy-saving with diminished funds for long term investment; the lack of incentives for such investment; increasing risk aversion and declining capacity to regulate development. The respondents quoted in Chapter 4 might often have been speaking from a much wider geographical range of authorities about the overwhelming importance of national policy as it affects incentives and organizational discourse and culture. The impact of these factors and recent changes is confirmed by other studies (Committee on Climate Change 2012a and b, CBI 2012, Ashton 2013).

However while national policies are the same, the study has resulted in new findings on how geography and settlement patterns as well as history affect local political culture; and new insights on how differences in political allegiances and corporate culture are linked with very different attitudes towards climate change and the carbon reduction agenda. To this extent, if the study were reproduced in large metropolitan areas, say, or in mid-Wales, one might expect big differences in these attitudes and in authorities' policies and approaches.

Ninety-six authorities have signed up to 'Climate Local', the Local Government Association's successor to the Nottingham Declaration, indicating an intention to 'reduce carbon emissions and to increase resilience to a changing climate' (LGA 2015). None of the councils studied were signed up to this initiative; there is clearly greater positive engagement with emissions reduction in some authorities than in those which were studied.

A more intriguing question is whether the findings have relevance for organizations other than local authorities. I have already noted that the sustainability manager in a University faced some issues similar to those mentioned by the study respondents. The classification of influences used above was taken from a study of pro-environmental innovation which included businesses, local authorities and other public sector organizations. The importance of corporate culture, of technical knowledge and skill as well as appropriate institutional arrangements and personal beliefs and commitment were highlighted also in that study (Reason et al 2009). The objectives of businesses may differ from those of public service organizations. The 'discipline of the market', it would seem, might eliminate the space for objectives other than the maximization of returns to investors. However there is a

creativity about how businesses frame their goals and fulfil them (Ballard 2005), and the achievement of environmental credentials can also have a commercial value. One might ask whether public sector organizations and businesses are really so different, or is the difference more one of emphasis and degree rather than of a wholly different dynamic?

I believe that one further aspect of this study's findings, which goes beyond existing research in this field, does undoubtedly have wider relevance, and that is the light it has shed on the way that subjective and psychological factors interact with more concrete and objective limitations such as technology and institutions; how organizational and social culture can narrow the range of initiatives considered even in response to explicit government policy; and yet how this culture is also affected by what appear to be 'hard' financial measures such as cuts and incentives. The examples emerging through analysis of the interview data give rise to insights which have implications for both the way decision-making in organizations is theorized and for policy. The following section considers the implications of the study for the theories outlined in Chapter 1.

6.9 Rival explanations of climate change dismissal : theoretical reflections

Rapley (2013) introduces the idea of climate 'dismissal', a term which avoids prejudging which theories most adequately account for the observed lack of attention given to the risks which climate change poses. This term may therefore be preferable in a discussion where we evaluate the relevance of different conceptual frameworks. I have explored the perspective of denial, which implies that a special explanation is needed to account for failure to acknowledge and act on the problem. I have also considered the bounded rationality approach, which identifies many possible reasons for climate change dismissal and explains, in terms of human cognitive architecture, why few political resources may be devoted to effective carbon reduction activities. The complementary literature on 'bystanding' (Darley and Latané 1968, Kent 2009, Lunn 2011) provides the explanation based on evidence from other kinds of incidents, that the wide diffusion of responsibility for climate change militates against anyone taking specific responsibility for action. Theories of rational choice in turn emphasize the role of material interests in discouraging effective climate change policy, at individual, local, national and international levels. (Rational choice here is taken to mean maximizing individual or local likelihood of gain; to concede the inclusion of altruism, ecological consciousness in

the 'utility function' of individuals would be to make rational choice theory unable to yield testable propositions and indistinguishable from other theories.)

However, explaining inaction on climate change by agents putting their particular material interests first, is valid only against the backdrop of inadequate institutions of international governance, and a political perspective is required to explain in more depth why this should be so, why organized effort to mitigate climate change is not available as a superior option to individualistic overexploitation of the atmosphere. Such an explanation (largely beyond the scope of this research) might show why international governance is weak and permeable to vested interests, encouraging parties to take an individualist, or rather, an atomistic nationalist viewpoint.

On a more cultural level, data from this study illustrates the point that "material interests" are perceived through an evaluation process which owes much to worldviews and belief systems, so that a neoliberal/homo economicus paradigm produces a very different perception of self interest from one in which there is a moral order to the universe, or one where things seem to be connected and interdependent. The latter view implies that individual persons or nations, by virtue of their connections, have a greater influence on others than would appear in the individualized world of conventional economic theory.

In short although the perspective of rational choice is consistent with much of our data, this is very far from a complete explanation. Just as Garret Hardin's original hypothesis about the Tragedy of the Commons does not have universal validity but concerns a very specific cultural context, so the burden of explanation for climate change dismissal and the absence of effective policy, is necessarily also cultural and institutional.

In this study I have found that, although people stating a sense of helplessness can be a defence against change, and pessimism a defence against hope, some agents really do fail to act, or 'drag their feet' on implementing mitigation measures because they don't think that they are effective. They may believe, as recounted in Chapter 5, that other authorities, or the Americans, or the Chinese, will not undertake measures of their own. Thus, the rational choice perspective appears to be borne out by this observation. However, as I argue above, while this view may be formally correct in some cases, we need to look also at what factors condition peoples' perceptions of their agency or

helplessness; this view too is socially constructed and may depend on views about the actions of others. This includes beliefs about what national government can and will do - hence the enormous significance of government's perceived stance on carbon reduction - and upon how other cultures and governments respond to the issue. There is a world of difference between the widespread viewpoint (Webster (2015) and which is clearly found in our data) that Britain should not be acting first and ahead of the crowd in mitigation policy, and the view that UK is one of the principle foot-draggers preventing more ambitious EU positions on climate change mitigation (Harvey 2012,2013,Crisp 2014). Councillors' and officers' views, as with other people, are influenced in a complex way by personal life experience, political culture and social expectations, and estimations of others' value systems as documented in Common Cause (Crompton 2010).

It is interesting to compare attitudes to climate change mitigation with the attitudes of rescuers of Jews during the last war, and those of bystanders and Nazi sympathizers as documented in many studies (eg. Monroe, 2008)

The difference between the rescuers and other groups was that

a) The rescuers had a sense of life as a gift, feeling privileged and under obligation to others; that it was normal to help others; that this is what being human is about and what makes people happy; whereas for the other groups, the suffering of those who were 'different' held no relevance for them.
b) The rescuers had a greater sense of efficacy. The bystanders only saw problems – what could I do against so many? And the Nazi sympathizers saw themselves as a persecuted group, held the self-image of a victim, and any empowerment experienced came not from personal elements but from feeling aligned with history.
c) The values of the rescuers were integrated into their identity, with a strong sense of themselves as a good person, connected to others through bonds of common humanity. Mores like 'you must help others' were ingrained, so that they frequently reported 'I had no choice', or 'anyone would have done the same'. They did not see themselves as unusual in any way. Bystanders saw themselves as weak and alone.

In my sample there was a range of views between those who saw mitigation action – whether personal or organizational – as ineffective – and those who felt that even their individual actions

were profoundly important; the latter of course more hopeful, both about the possible responses from other nations and about the validity of local action. Thus, the choice dilemma did not look the same to everyone, and the choices made were dependent on their varying views of the world and other people.

So it can be the case that people choose rationally to be inactive, feeling either powerless or unwilling for disproportionate sacrifice. This choice can result in either conscious worry, pain and discomfort (of which some evidence emerges from our study), or in some degree of socially supported and socially organized denial or numbing, which has the effect of reducing this painful awareness and concern about the future. The virtual cessation of talk about climate change in many circles after the Copenhagen debacle suggests that this mechanism may be at work in the following years' 'Climate Silence' (Corner 2013a).

Alternatively, it could be that denial theories stand up on their own with psychological mechanisms and human cognitive shortcomings working together as a sufficient cause for climate change dismissal and resulting lack of action. Is denial a brick wall preventing political mobilization and effective measures for greenhouse gas reduction, or is it merely pain relief for those powerless in the grip of a hegemonic political and economic system heading towards destruction?

Given the traction and relevance of 'rational choice' and 'bounded rationality' explanations for climate change dismissal, it is interesting that even though local authorities declare limited and declining capacity for mitigation policy, their sense of agency appears to expand with the political will to explore it. Even without the systematic support of central government policies, some authorities as we have noted, with cross party agreement, introduced path-breaking policies on energy efficiency and renewable energy generation in the 1990's. Within this study quite some diversity was observed between the measures that different authorities felt able to take, how systematically they sought energy efficiency in their own estate, how far they encouraged or negotiated measures to limit energy demand in their area, and how strategically they thought about developing a low carbon economy. In the most ambitious councils (cities, by and large) this sense of agency has probably diminished in recent years, but the policies and discourse take a long time to change: some of the current approaches to carbon reduction began to emerge in the days of Local Agenda 21 initiatives and in the mid 2000s. Climate change strategies developed in 2007-9 are being revisited in

Weirbridge. On the other hand some departments in some authorities remain untouched by considerations of carbon reduction after two decades of rhetoric and varied policy measures. In fact the variability of central government approaches to the issue must play a part in the lack of implementation of carbon reduction policies in some authorities.

However it is one of the findings of this study that the differences between authorities are explained partly by worldview factors, including political complexion, *and* by objective external factors which affect their goals, sense of agency and ability to act effectively. Cities have an advantage in this respect in that the size of their budget affords a little more discretion in its use, and in that they have perhaps greater diversity of sources of finance – including development much of which cannot be regarded as 'sustainable' by any objective definition.

Overall then, a key question is whether the apparent existence of denial strategies is one of the chief limitations on decisive action to reduce carbon emissions within the local authorities in the study, or whether more objective factors in conditioning choices are more important. Socially organized repertoires for avoiding feelings and shifting responsibility clearly have some influence on the enthusiasm with which reduction strategies are searched for, but the interview data suggests that the objective, mainly external factors are at least as important, both in diminishing the scope of action and reducing any sense of agency. Even in enabling people to take in difficult information about climate change, but also in promoting active responses, agency has been shown to be important at an individual level (Ballard 2005) and this study finds there is evidence that this is so at a corporate level as well. Morris, member of a rural council whose budget is being cut by 30 per cent frequently used phrases like *'it's going to be completely out of our hands'*. In Chapter 5 I noted his view on the Secretary of State's decision in favour of a large windfarm in the area: *'I think it makes people say, well it's somebody else's agenda, and they'll do what they like anyway.'*

If this perspective is indeed correct, then neither better information nor the acknowledgement of painful feelings are sufficient to motivate action; a sense of being able to take effective action is also an essential ingredient, and with local authorities this would imply measures which reduce the collective choice dilemmas, and the gap between the cost of action by single authorities and the local benefits which might be considered to flow from them.

Just as 'the strengthening of individual agency and group capacity (whether motivation, confidence, knowledge and/or skills) is an important, but sometimes neglected, ingredient for successful behaviour change strategies' (Mayne et al 2012, p.26), it seems unlikely that local authority personnel will undertake further initiatives in carbon mitigation without measures that improve their ability to make meaningful changes, of which finance is one aspect.

Individual respondents, while most agree that their organization can play a positive role in climate change mitigation, must appreciate that their authority is faced with a collective choice dilemma; if they should commit resources to carbon reduction, their efforts will be ineffective if other authorities do not do likewise; and the achievements of the UK would be overwhelmed if other countries also do not restrict their emissions. National government policy, I have argued, can overcome the first of these dilemmas by making a degree of action mandatory or by incentivizing investment in greener buildings and enterprises so as to achieve effective country-wide emissions reduction. It is more difficult to alter the second. This second level of dilemma, which is the more acute the more other nations are regarded with cynicism, is affected not only by progress in international negotiations and action by other countries, but also by the image which national governments and the media put out about the likely success or failure of these negotiations and the positions of the participants.

For example, the Chancellor of the Exchequer's comment that 'we're not going to save the planet by putting our country out of business' (Osborne 2011), is to play to the sceptic tendency and highlight the potential disadvantages of making positive moves. On the other hand the former Climate Change Ambassador compares the UK's progress on decarbonization unfavourably with that of other nations and argues that the UK could regain a leadership role and an influence well beyond its size (Ashton 2013). This points to the advantages of a more positive game plan.

So a collective choice dilemma can become more or less soluble depending on whether either strong governance arrangements or inter-party/international relationships seem to provide the possibility of trust. Without this, rationality dictates a tragedy of the commons.

Since policy alternatives relating to climate change would almost certainly be collective solutions in some degree, then we must say that the mediation of ideology is important. In the UK, as we have seen, the vocabulary of localism and freedom from government interference is widespread and tends

to dominate policy discussions. This is part of an ideological approach which trusts in individual entrepreneurship, of the benefits of the pursuit of economic gain, and distrusts bureaucracy, regulation and other apparatus for implementing collective decisions (except law enforcement and armed forces).

In some way the advance of this ideology is linked with a growth of cynicism traced by opinion polls in the public in general. For example, a poll by TNS BMRB (2013) found that whereas in 1963, 46% thought that "having elections makes government pay a good deal of attention to what people think", in 2013 the figure was 17%, although more say they take "a good deal" of interest in politics. The growth in neoliberal ideology may partly reflect this reducing trust in government, and/or may be part of the reason for it by encouraging the very self-interest which it posits (Crompton 2010, Greenham 2011). The poll also suggested there had been a sharp decline in optimism.

In conclusion, a rational choice perspective might give reasonably accurate predictions about organizations' behaviour within a given institutional and ideological framework – but incentives within that framework can change behaviour. Moreover, the whole framework is liable to warp, melt and to solidify in new institutional and cultural forms which alter calculations and opportunities, what people expect of others, and the chances of different coalitions and collectives to achieve their aims.

Such changes naturally occur over time. For example, concerning the recent past, Ian Christie points out that

> the institutional forms that support collective agency are in decline, given the marginalization of unions and churches in particular, but more broadly of institutional forms that contextualise ethical commitment, and connect one's personal story and journey to a shared story and journey (cited in Rowson 2013, p13)

He suggests that support for institutions and cultural expressions which support collective agency are much needed, as well as networks based on the principles of common resource management that Elinor Östrom identified, 'for instance those embodied in carbon quota systems, feed-in tariffs, collaborative consumption and so forth' (Rowson 2013 p13).

6.10 Communication and Leadership

This fluidity of the institutional and ideological framework for actors' decisions also has implications about the style of leadership needed to bring together policy on climate change, as with other issues which cause anxiety and public unease. Fred Alford argues that leadership is often more fruitfully thought about as interpreting and holding anxiety than as grand strategizing and master-planning. Above all, it is about

> what Melanie Klein calls depressive anxiety: that one is not good enough, mature enough, strong enough and self-controlled enough to make good the badness in the world, badness to which one has contributed by malevolence or neglect. Good leadership is about helping followers to face this anxiety, and so put together the parts of themselves they keep separate so as not to know what they fear to know, their own weakness, immaturity and incompetence (2001, p.153)

Putting together the parts that they keep separate so as not to know what they fear to know, sounds very like overcoming disavowal. In the light of this comment, the recommendations of the RSA report (Rowson 2013) make sense: that there need to be meaningful conversations about climate change (for more than ten minutes), involving civic society, and that media communications could be refocused away from the existence of the problem towards competing ideas about solutions. A meaningful conversation will acknowledge both anxieties and difficulties, and not encourage individuals to ignore or deny them. Weintrobe writes:

> When we advocate policies about climate change measures aimed at minimizing emotional difficulties for people, we should beware lest our unrecognized agenda is to put ourselves forward as ideal leaders magically able to spare people pain. In this case, our anxiety might be about our own survival as ordinary un-ideal but real leaders. Actually, people need ordinary real un-idealized leaders to help them to face and engage with very difficult realities about climate change. When we pretend we have idealized solutions that enable people apparently not to have to face any difficulties at all, we support disavowal and can unwittingly cause peoples' anxieties to rise, not diminish (Weintrobe, 2013, p. 45)

In the light of this, those with environmental concerns, inclined to play up the dangers in order to elicit a response, need to beware of projecting anxieties on to the people they wish to reach, which undoubtedly creates resistance. In the same discussion, Lehtonen and Vlimaki write:

> Modern man is like a baby adult….it is important to pay attention to the effects of primitive psychological measures, denial as negation and disavowal first and foremost, that are activated

> by the threats, and to show ways to cope with the threats without seeking security from reality-distorting denial (Lehtonen and Vlimaki, 2013 p 50).

This research has confirmed and emphasized the importance for individuals of a sense of agency *in order to be able to become sufficiently aware of scale of the problem.* People also need a sense of doing things together, of being part of a group, a socially organized effort. The activities of climate action groups and Transition initiatives, involving people in locally relevant action, form one avenue along which agency can be created and reinforced. One example, organizing for communities to create and manage their own energy supply can be a step in the process of taking more responsibility for both the problem and for positive solutions (what Randall (2013a) would call reparative action). Similarly, building alliances, locally and nationally, is important not only to create political traction but also to demonstrate a capacity for shared action. Rowson advocates 'Building reciprocal commitment through international reinforcement' and gives the example of10:10's #itshappening online platform, which celebrates examples from around the world of significant progress on dealing with climate change (Rowson 2013 p.58). Some of these examples are:

> 'One day in November 2013, Denmark was powered entirely by wind (with some left over!)'; 'Bangladesh installs 1,000 solar power systems a day'; 'Cyprus heats hot water almost entirely from roof solar panels' and 'the UK now gets one sixth of its electricity from clean sources like wind, solar and hydro. That's up 56 per cent on this time last year.' (#itshappening, quoted in Rowson 2013 p 58).

Rowson concludes that acting on climate change can include sharing progress with similar people and groups internationally.

An unrelated and vigorous debate has occurred on the best forms of communication to elicit public interest and political action, but which impinges on some of the same ground. Several writers agree that the grounds for appeal to individuals to alter behaviour need to be ethical and situated or framed within a discourse about the common good (see Crompton 2010, Alford 2001). Crompton argues that appeals to the public to engage in pro-environmental behaviour change for reasons of financial advantage, social approval or personal security (the so called 'extrinsic' or 'self-enhancement' motivations) may succeed, but by stimulating these motivations they strengthen them and thus undermine the caring and universalist concerns for 'bigger than self' issues which support

environmental action over a much broader front. Some of the underlying research in 'intrinsic' and 'extrinsic' motivations is open to question in its simplistic formulation of these classes of motivations, but this does not undermine the point that 'value frames' used in communication prime, and therefore strengthen motivations which either help or do not help to increase concern for others, or that there is a correlation between environmental concerns and concerns for vulnerable people.

Corner (2013b) argues, in opposition, that those seeking action on climate change should appeal to whatever concerns and 'value frames' will cause people to be more receptive, as the advocates of social marketing approaches do. He argues against scaring or shaming people (not what Common Cause is advocating), but instead for basing conversations with the centre-right on such things as the beauty of the local countryside and the need for energy security and moving on to climate change from there. He does not go so far as Tony Juniper (2012), who argues that a price should be put on nature, because in no other way can the natural world be taken account of in the conversation about economics, and that it may be advantageous to sell green consumer goods by appealing to motives like prestige and saving money.

Hoggett (2013b) points out problems with the viewpoint that one set of values is no better than another when reality is able to 'bite' us, irrespective of the way the issue is framed – that there is a reality independent of our constructed positions and that perhaps some values reflect reality better than others; and that it is indeed meaningful to speak of denial. Moreover 'value frames' can reflect social institutions and power systems and so should not be regarded uncritically. He suggests that efforts should be devoted more towards creating the conditions in which difficult truths can be faced.

Corner (2013b) and others reply, in a fascinating series of comments, that attending to peoples value frames and starting a conversation on this basis is likely to get further, that the term 'denial' can turn people off, and that the term itself is a value frame. However the evidence reported by Kirk suggests that 'people have all the values all of the time. Just as even the most hardcore environmentalist cares about her social status, so even the most rampant financial wizard has some concern for other people and the environment' (Kirk, 2012). Kirk goes on to argue that therefore appeals to benevolent and other-directed values can not only elicit but strengthen responses to these appeals. The data presented in Chapter 5 of this thesis confirms that people do not entertain a single consistent set of values; that they are conflicted, and can entertain simultaneously a number of different value

systems, (indeed, as this study illustrates, in some cases, different and not necessarily consistent positions on climate change). Framing does indeed make a difference to which values are elicited. But where there is deep anxiety, more than a certain framing may be needed to open up a conversation. Ro Randall brings a psychoanalytic perspective and suggests that it is vital to sit down with people and unravel how climate change interlocks with the values and practices in their lives, with meanings, desires and emotions such as loss, trauma, guilt, anxiety, despair and rage; and only then can sense be made and the journey to integrity become easier (Randall 2013). In the guided group resource process 'Carbon Conversations' which she designed with the support of Cambridge Carbon Footprint, local groups meeting for six evening sessions are invited to begin their reflections on changing lifestyle by sharing their goals and values. They are encouraged to take space for feelings associated with change, and to work to meet their individual and specific needs in ways compatible with their care for others and the earth.

These intimate processes may be what individuals need; but for those who, like Tony Juniper, find themselves in a corporate environment discussing particular policy issues, they may find their position far more tenable and their arguments command more attention if they are able to express their views in terms of prevailing value frames, for example in the language of cost benefit analysis. It is true that this language conceals gargantuan value judgements, no matter how or in what way social costs and benefits are imputed to 'ecosystem services' and future streams of benefits; and that these value judgements ought to be debated as a matter of public policy. But local authorities, certainly, are not the forum in which relative prices and shadow prices can be changed.

Thus, in existing corporate environments, without being able to change national policy, putting a price on nature *and having it enforced by taxation or other policy* is one way to change behaviour within prevailing norms and discourses. Prices are also communications about values, and governments can effectively change them (for example through Feed in Tariffs, or the Carbon Reduction Commitment) in ways that not only incentivize compliance on the part of local authorities and businesses, but which also command respect and take their place as an uncontroversial framework in discussions of policy. A carbon price fixed by central government rising steadily and predictably, as recommended by Dieter Helm (2012), falls into this category, and could be achieved by gradually raising the floor price from its 2014 level of £7/ton.

Incentives of this kind apply across the board and thus remove one element of the collective choice dilemma associated with climate change mitigation, that each player has an incentive to try to get a free ride. I have argued that as things stand, 'the business case' is not only a particular value framework for decisions but has become one of the social norms in corporate settings which focuses discussion, mediates between those with (somewhat) differing ideologies and excludes positions which are not 'mainstream', such as concern about the next generation, or what is sometimes known simply as 'green'.

To bring about a wider change in culture such that difficult truths about climate change can be faced with integrity *within corporate settings* requires further investigation. This brings me to the project which some have called Cultural Psychotherapy, which seems to answer the challenge which Hoggett has issued, on a scale wider than the individual.

6.11 Cultural Psychotherapy

On the Royal Society for the Arts (RSA)'s website the page describing itself contains a brief animation in which the RSA describes itself as carrying out cultural psychotherapy, 'delving into what has shaped the collective consciousness of modern people' (RSA 2013). One would hope that anything deserving the name of therapy would aspire to more than delving and discovery, and more than (as the RSA see their task) enabling us to critically explore our values.
So what is, or would be, cultural psychotherapy? Since there is little consensus about what individual psychotherapy consists of or how it may be defined, there is considerable scope for potential definitions. Let us examine some candidates:

McIntosh (2008), like many, sees consumerism as an addiction; not surprisingly, he has twelve steps to offer as part of a process which he sees as reconnecting with reality (see Box 3); a process focused around three main elements, remembering, revisioning and re-claiming what is needed to bring the vision to fruition.

Box 3: Twelve Steps Towards a Cultural Psychotherapy

12 steps **'Towards a Cultural Psychotherapy'**:

1. **Rekindle the Inner Life**; opening to empathy
2. **Value childrens' primary integrity**
3. **Cultivate psychospiritual literacy** – combining spiritual retreat with social context, recognizing our deep connections and acknowledging our shadow
4. **Expand our concept of consciousness**. Advertising which hijacks our consciousness is theft of life; consciousness matters and requires practices which rehumanize and restore 'presence'
5. **Shift from violent to nonviolent security**
6. **Serve fundamental human needs** (not wants)
7. **Value mutuality over competition**
8. **Make more with less**
9. **Regenerate community of place** – community is strongest when grounded in place
10. **Build strong but inclusive identities**
11. **Educate for elementality**
12. **Open to grace and truth**: Kindness, gratitude, truth to restore consciousness to clarity

Source: McIntosh (2008) 'Hell and High Water: Climate Change, Hope and the Human Condition'

Although beautiful, some of these steps would seem to be results of, rather than ingredients in a therapeutic process, though the emphasis on restoring consciousness to clarity is crucial. Would we not say that working with unconscious material, and with strong feelings including fear, shame and anxiety, are vital components of any cultural psychotherapy? If so then Alford's concept of containing government, introduced in 'Leadership by interpretation and holding', comes close to the mark (Alford, 2001).

But perhaps other approaches, including the arts, ceremony, participative projects and public fora can also provide a medium for evoking, amplifying, expressing, and containing conflicting motives and powerful feelings. I am reminded of the role which Truth and Reconciliation hearings provided in post apartheid South Africa, in allowing bitterness and pain to be recognized and guilt admitted, even if reconciliation was not universally achieved. Charities such as International Alert is providing individual trauma counseling (still) following the genocide in Rwanda twenty years ago, combined

with Dialogue groups in villages and schools which allow the deep scars of inter- and intra-family violence to become healed. Similarly the "World Work" stream of Process seminars run by the Mindells and others, and the MultiFaith conferences run in Bosnia by Soul of Europe, somehow allow irreconcilable positions to be articulated and for groups to encounter one another through the participants, in a holding environment, so that genuine meetings can occur and new relationship begin to be built where there was none before (Mindell and Mindell 2014, Reeves 2014).

In relation to climate change and the prospective change and loss in landscapes and places, De Silvey (2012) advances another possibility, that of rewriting the history of places in ways that incorporate the normality of flux and change. Her 'anticipatory history' of Mullion Cove in Cornwall provides an example of this way of working with attachment to the world as we know it but where promising 'for everyone, forever' (in the words of the National Trust) is unrealistic.

'The Work That Reconnects' workshops run by Joanna Macy and others also offer an explicit opportunity for recognition of loss and 'pain for the world' in safe settings, and the meeting of hope and despair without either being annihilated. This work enables the building of wider support among participants for individual autonomy and collective endeavours, and helps to reconstruct the potential for action based on integrity, rather than upon fears, projection upon others, or the acting out of personal material.

Habermas and others' advocacy for discursive, or deliberative democracy envisages policy development as the outcome of dialogue aimed at understanding ('communicative action') rather than that of 'strategic action', communication undertaken by parties in their own interests, seeking to win the allegiance of a self-interested public (Hoggett 2009). In this framework, citizens would seek to understand one another's worldviews and needs in relation to climate change mitigation and adaptation, enabling opposing views and interests to be reconciled, or at least to the point where negotiated policy outcomes could be reached.

Critics within theoretical debates about democracy are scathing about the possibility that parties to discussion can leave their personal and organizational or business interests, their communication strategies and power ploys 'at the door of the conference centre' (Hendriks 2010), and that such discussion can take place without being itself skewed and bounded by existing power relationships.

Sometimes, it is true, dialogue which very much resembled this model took place in the mid-1990s involving community groups and local authorities as part of the Local Agenda 21 process, though in time it led to more formal structures being set up to take forward initiatives within the ambit of the authorities' environmental work. Again, something resembling this has occurred as Transition groups seek to involve councils in planning for a low carbon future, but in a more structured and facilitated manner (for example the succession of public/council workshops at Taunton Dene and in one district in this study). These processes may have influenced and augmented traditional democratic processes, but not replaced them.

As a concept which might make inroads into the traditional, less participative democratic structures, deliberative democracy would be harder to realize. The respondents in the present study gave many examples of how, in defence of institutional power they saw examples of Lukes' three faces of power (Lukes 1974). Powerful individuals in some places supported carbon reduction, though the preferred measures were sometimes cosmetic (renewable generation on council offices) and sometimes 'flagship' projects rather than thorough processes. In others overt opposition to carbon reduction as an independent goal was intense and successful. Many examples of the mobilization of bias also appeared in the interview data – officers taking councillors aside to object to particular policies, projects delayed in implementation, emphasis on the business case and rapid payback periods. Respondents also mentioned being unwilling to propose carbon reduction measures unless they could be brought forward under some other rationale, 'nervousness' about expressing certain themes in policy, or the existence of policies which it would never occur to anyone to question (high discount rates, for example, or the virtue of foreign investment if one could get it). To say that the operation of these forms of power could be avoided in a more open democratic process would be to risk accusations of naïveté, desirable as such dialogic innovation would be.

Preconditions for fruitful public deliberation have been the subject of some debate. Insistence that participants should express themselves 'objectively' without partisanship or passion can be felt as culturally oppressive in itself. As Hoggett notes

> 'The point is that democracy without impassioned argument, without rhetorical flourishes, and without the sharing of laughter, anger, or grief is democracy without vitality, a limp and mannered affair that is too easily controlled and manipulated by governments that purport to pursue consultation and invite broader public deliberation'(Hoggett 2009, p. 149)

He draws a comparison with the practice of psychotherapy in this respect: that a useful dialogue is likely to be one in which at least one of the partners is prepared to be disturbed by the other, where some change of view or response to the unforeseen is enabled to happen.

Ro Randall (2013b), like Alford, draws on psychodynamic theory, to argue that in depth conversations which go beyond 'discursive democracy' are central to the change process, and that having these conversations at all levels, in a way which allows the recognition of feelings as well as arguments, is crucial. Rowson (2013), like Corner (2013a) sees such wider conversations as essential to resolving issues connected with climate change. For this to occur it is necessary for disagreements to be articulated in the language of feeling as well as 'reasoned' argument, and tolerated and faced rather than avoided; bearing in mind that arguments about climate change (not only about the rebound effect as Rowson suggests) are often a cloak for broader ideological conflicts. Conversations need to proceed in a way which as far as possible, opens up space for responses rather than provoking polarization, utilizing curiosity rather than judgement. Rowson quotes John Ashton, former Climate Change Ambassador with the Foreign Office:

> You can't transform a country by stealth. It requires consent and in a democracy that means an explicit political choice. It requires mobilization and therefore a call to arms. It requires honesty about the burdens, and support for measures to help those whose communities and livelihoods depend on the high carbon economy (Ashton 2013 p 19).

In our case study, a senior officer ('Alison') made statements about climate change as she placed objects in the Time Capsule which were emotional as well as intellectual; the action illustrates the way in which her attitude and facilitative actions seems to have contributed to a culture in which climate change could be talked about. In Kari-Marie Norgaard's research it becomes clear that under conditions of denial, talking about climate change can itself be action which challenges the social conventions of silence or of avoiding responsibility.

Perhaps there is a role also for working with conflicting viewpoints about climate change policy, for example with supporters and opponents of wind turbines; to distinguish the desires involved, to protect landscapes and heritage or to protect human and other species from climate change; and to separate these from areas where the conflict is a proxy for something else, perhaps for different views of a good society and the appropriate role of the state. These wider views might in turn reflect

differing experiences of coercion whether in private life, from state regulation or in the structural violence of the market economy.

Initiatives in cultural psychotherapy therefore involve creating opportunities to face our deep anxieties in relation to climate change, the natural world and the future, acknowledging that we are in trouble, and making space for emotional as well as intellectual forms of expression. It also implies acknowledging our destructiveness, personal and collective, in effect if not (conscious) intention. We need to arrive at a place where we can acknowledge shared responsibility rather than seeking scapegoats. It doesn't seem too difficult for individuals in surveys to state that everyone bears a share of responsibility for global warming, but in public rhetoric, while negotiations on burden sharing are going on, it may be a different matter.

The results which might be hoped for from a cultural psychotherapy approach are

1. Reinforcing courage to act, as Rowson suggests:

   > 'Emphasizing the need to have courage to act is less about advocating personal heroic commitment that we hope to magically spread en masse, and more about those who are already deeply committed building opportunities and platforms for reciprocal commitment to arise and spread' (Rowson 2013 p 13)

2. Questioning the growth ethic:

   > 'Climate change is as much a financial risk as it is an environmental risk. To reduce emissions at a speed that is likely to keep us within the 2 degree target, we may have to question the growth imperative and rethink the structure and purpose of the economy. In light of current public attitudes, that seems politically infeasible, but at the very least we need to stop taking economic decisions as if they were not also decisions about climate change, and stop talking about action on climate change as if it didn't have economic implications.' (Rowson 2013 p 22)

3. Organizing to solve collective choice dilemmas, not only at international level but also at the level of cities, local authorities, communities and civil society, building collaborations to encourage formal agreements, in a manner which Elinor Öström called 'polycentric' (Östrom, 1999)

6.12 Cynicism and Hope

I have argued that one of the ways people try to protect themselves from accusations of being idealistic and fluffy is to distinguish between 'green' views and being 'practical' or 'realistic' and to adopt the latter. There may also be a defence which serves internal purposes here as well – a defence against hope. While Paul Hoggett (2012) has pointed out that this position is in fact fatalistic, to admit of hope also entails admitting the possibility of disappointment. In another context, writing of the struggle against apartheid and the temptation to despair, the Christian theologian John de Gruchy quotes Moltmann: 'Hope is true realism, he declared, because it "takes seriously the possibility with which all reality is fraught"' (*Theology of Hope*, p 25, quoted in De Gruchy, 2013, p 195).

Hope is different from both faith – trust that something will happen – and optimism – a belief that it will. It may be encouraged by a sense of agency but is distinct from it also. Yet good leadership, as exemplified by Kennedy, Mandela and Churchill, has the quality of encouraging the hope which makes people realize the agency which they have. In this sense hope is more realistic than the passivity which a cynical 'realism' engenders. Although I have argued for the validity and relevance of the rational choice approach to organizational as well as individual behaviour in the face of the challenges of climate change; in theoretical terms, it is interesting that, as with rescuers during the holocaust, it is the sense of connection with others as well as with the natural environment, which provides the background or worldview which engenders hope and practical action.

Chapter 7 Conclusions

The UK has subscribed to the European and global goal of holding climate change at or below 2°C above 1990 levels, and government policy has recognized that local authorities play a crucial role in achieving the carbon emissions reductions enshrined in the Climate Change Act. It 'empowers' them, through the Local Government Association's 'Council Framework for Climate Change' to do much more in carbon mitigation (DECC 2012, LGA 2013, 2014). But at the same time, the financial crisis and centrally driven budget cuts have shifted policy concerns in local government towards reducing expenditure and encouraging growth.

The present study investigates how far individual attitudes and corporate culture are important in determining the action local authorities have been taking in response to these central policies. In order to do this it assesses what action has been taken, and how far local authorities' policies on sustainability and carbon reduction were affected by the changing economic and policy environment, and by public pressures. It is based on interviews with 39 councillors and council officers in local government in the South West, supplemented by an analysis of documentary evidence and national reports. The study uses psycho-social analysis of interview data to explore attitudes to climate change and identify relevant aspects of pervading institutional norms of discourse and behaviour, and combines this with the study of policy and actions on carbon reduction in an innovative method to examine how individual attitudes and social and corporate cultures interact with material pressures in the determination of policy. Conclusions are enriched through comparisons between contrasting authorities to show how differing attitudes and corporate cultures lead to differing approaches to carbon reduction.

My conclusions fall into four parts. In the first, I summarize the findings of this research in relation to the research questions, based on the findings in Chapter 5 and the contextual data laid out in Chapter 4. I have shown that contextual factors govern a great deal of councils' response to central government policy, but from a comparison of authorities with significant differences in action to reduce greenhouse emissions I conclude that attitudes to climate change do impact upon corporate action, and that climate change dismissal and socio-cultural norms are extremely important in the way that they affect organizations' culture and processes. In the second part, I examine the implications of the study findings for the way in which the different influences interact with each

other and for the theoretical approaches listed in Chapter 1. In the third, I reflect on the adequacy of the methodology adopted to the aims of the study and how the conclusions might be further investigated. The final section contains a brief list of the implications for policy which follow from these findings, for which further evidence appears in the earlier chapters, both for national policy and the local institutional policy framework.

7.1 Summary of findings

In order to assess the influence of subjective factors it has been necessary to document what has actually been achieved by local authorities in climate change mitigation policy.

7.1.1 Policy outcomes

Despite the difficulties with statistical measures, existing data show that both area greenhouse emissions and those of councils' own estates have fallen in the period under review. Up until 2009 (the last year for which figures are available) greenhouse emissions in the South West had fallen in every county, in line with national trends, slowly but accelerating in 2008-9 probably due to recession (Lash 2011). Declining emissions from local authorities are partly due to losses in budget amounting to some 30% so far and resulting cuts in staff and services. However greenhouse emissions per employee and per pound expenditure have also been declining where this information is available, indicating gains in carbon efficiency which are most likely the result of policy and practical measures undertaken.

Few councillors, and relatively few officers interviewed, knew whether the greenhouse emissions from their own council estate were going up or down. Sometimes this was a result of recent changes in methods of measurement and accounting. More generally, it was because concern for emissions was the job of a specialist officer, and nothing of significance hangs on these figures. Measurement issues are clearly not unimportant, but as things stand, they are not the major barrier to more active carbon reduction efforts. Motivation and capacity appear to be more significant. Motivation and action increased in the period 2006-10, even in authorities where attitudes did not particularly favour action, because of the influence of regulations, reporting requirements, availability of specific incentives such as the Feed In Tariff and finance with low interest loans and support from

the Carbon Trust. Now that these incentives have diminished or changed, motivation in many if not most councils focuses on controlling costs rather than reducing climate impact.

While many councils were already actively involved in carbon reduction measures, financial austerity has increased the motivation, particularly of those hitherto less active, to reduce their energy bills. It has also increased tendencies to risk aversion and short-termism which, a number of respondents noted, were already prevalent in local government. These factors militate against any investment with a longer payback period, and therefore exclude some energy efficiency and renewable generation projects which could achieve more substantial emissions reductions.

Respondents noted that lack of finance prevented council initiatives, such as promoting low carbon solutions for households, businesses and landlords, or undertaking better insulation of some of their own properties. It also delayed major projects such as district heating schemes. They also spoke of the lack of a 'clear steer' from central government, and uncertainty about policy which had inhibited development of a number of initiatives, including Low Carbon Frameworks. Overall they reported a lack of central government support for carbon reduction.

A minority of councils were still making serious attempts to reduce the emissions in their area of jurisdiction (the old National Indicator 186); but growth was generally considered a high priority without any qualifications in regard to carbon emissions or carbon intensity. 'Sustainability appraisal' tends to include criteria such as employment potential, landscape value, financial probity, and others which outweigh emissions reduction. In transport authorities, despite aspirations to improve sustainable transport modes, some respondents were concerned that more was being spent on roads than on public transport or encouraging cycling and walking.

Changes to the planning system, including the National Planning Policy Framework (NPPF), in establishing a 'presumption in favour of sustainable development', (without an operational definition of 'sustainable' defensible on appeal) have made it unlikely and usually impossible that local authorities will prioritise considerations relating to carbon reduction or environmental sustainability in their response to planning applications. The changes have also reduced their ability to insist on building standards which will further lower the emissions from new housing over the next 50 to 100 years and beyond. Responses indicate that the localism agenda, in seeking to reduce 'red tape'

constraints upon growth, has further limited the potential for the planning system to promote environmental sustainability. While planning departments sometimes consider minimizing emissions from transport in spatial planning of employment and residential areas, it appears rarely to be one of the criteria for approval of applications. Even councillors wishing to prevent building on flood plains found themselves unable to do this in the face of developer pressure. From these examples it appears that in the strong presumption in favour of development embedded in the NPPF, the qualifying adjective 'sustainable' is largely redundant. Despite these limitations, some respondents thought that councils could themselves do more through planning guidelines supporting negotiations to promote more energy efficient building and micro-generation of renewables as a regular part of new development.

Therefore this research shows in detail how contextual influences, in particular the nature of central government policy, had a very strong influence on all councils in the South West in driving the scope and direction of their carbon reduction initiatives. Some of these findings bear out the conclusions of national research on responses to changing government policy (Green Alliance 2011, Committee on Climate Change 2012a and b, CBI 2012). However the present research gives a gives a much more detailed picture of attitudes to carbon reduction within local authorities, and of relevant aspects of organizational culture, than have been available previously, and to this I now turn.

7.1.2 Attitudes to climate change

None of the respondents doubted that climate change was occurring, but 22 per cent believed either that it was primarily a matter of natural cycles, or doubted the findings of climate science about human causation. In respect of the second research question concerning climate denial, it was found that there was little literal denial of climate change, but a good deal of 'implicatory denial' or dismissal of climate change as a relevant policy concern. Just over half considered climate change an urgent problem. The sample, weighted towards those with responsibilities for environmental health, estate management, recycling, housing, planning and sustainability in some form, cannot be considered representative of their groups. However, given the number in the sample with these roles, it was instructive that just under half could not or did not offer any comment or opinion on statements concerning the speed or scale of likely climatic changes, nor on the possibility of tipping points in climate systems.

There is a clear lack of information about many aspects of climate change, but the research findings suggest that this is related less to the actual sparsity of information available than to three other factors:

- Avoidance of undesired emotions such as sadness, fear and worry, guilt, powerlessness, which may result in information being put into 'cold storage' in the ways described by theorists of denial.
- Lack of association with likeminded others with whom concerns can be discussed. The political disposition of councillors may affect this possibility, as much of the controversy surrounding the salience of climate change occurs within the Conservative Party and sceptics are more vocal within it (as probably within UKIP – but there were no respondents with overt UKIP allegiance); whereas this has been less controversial in other party settings. Nevertheless, political or even social settings where views about anxiety-provoking issues can safely be discussed may be rare.
- Lack of agency – a feeling of being able to do little to alter climate impacts in a meaningful way, and in the absence of connection to a widespread mitigation effort, pessimism about the likelihood of action by others.

I discovered that people can hold simultaneous and contradictory views about climate change. What is voiced may depend on context, and to whom they are speaking, and incompatible arguments may be deployed one after the other, seemingly to avoid the need for particular actions**.** The interview data suggests that there are grounds for interpreting these attitudes and statements as the result of strategies, rather than settled beliefs, deployed for the most part unconsciously to avoid having to experience anxiety, blame from third parties, guilt and feelings of helplessness.

Respondents were on the whole more optimistic (or less pessimistic) than the bulk of climate scientists represented by the Intergovernmental Panel on Climate Change, in that they thought that those who are now children would have the opportunity to mitigate climate change. However when asked their views about the future, the most of the respondents from all parties and positions were pessimistic. Anxieties about climate change as well as about other trends may have been pushed into the future. Although most respondents felt their organization could make a difference in mitigating climate change, the majority felt their agency in the matter was very limited, especially in

the rural districts. 'It's somebody else's agenda'. The general picture was one of diminishing concern and action, in a context of diminishing budgets and reduced power to control development.

7.1.3 Selective climate change denial, corporate culture, and the influence of subjective factors on action on carbon reduction

A comparison of contrasting local authorities showed that scepticism and uncertainty about climate change were more prevalent in rural areas, particularly those where there were many applications to develop wind farms. These attitudes were mobilized in defence against specific dangers, as perceived by protestors. In the rural area, Greenleigh, councillors often interpreted the question of greenhouse emissions as being about windfarms, with a mention also of very recent solar farm applications. Councillors were responsive to the hostility to wind turbines and some adjusted their beliefs about climate change accordingly; but officers in this situation also, as a result, became more guarded about carbon reduction proposals.

However in areas where climate change was threatening flooding or damage to infrastructure there appeared to be no uncertainty about the science. Instead there was a matter of fact acceptance that flood defences and adaptive measures were necessary. Where the benefits of recognition of the threats were concrete and local there was no climate change dismissal, but where such recognition seemed to require developments seen as unsightly and from which there were no distinct local benefits, it was hotly contested.

In the larger, urban authority, Weirbridge, where there were no suitable sites for wind turbines, responses included a wider variety of possibilities, including active consideration of how to minimize emissions from new and existing housing, in both council and private development. Climate change scepticism existed but did not result in opposition to the development of a strategic approach to carbon reduction in the authority and taking steps to pursue low carbon development over a wide area. This was linked to very different norms of discourse within the council, and a corporate culture which made agreed action possible.

This explanation of what might be called 'selective and strategic climate change denial' is in line with the findings of Norgaard (2013) but this study breaks new ground by including it in an analysis of sub-state policy on climate change mitigation.

Thus, despite the strong influence of central policy, not only did the attitudes of the public and of individual councillors influence action on carbon reduction but the rules of discourse within councils, the organizational culture differed significantly between authorities and resulted in fewer initiatives and a less systematic approach in the rural areas. The interview data suggests that effective initiative (as opposed to minimal compliance) on carbon reduction can thrive only in a favourable organizational culture. To some extent the norms of discourse in all councils were increasingly privileging financial logic, without making explicit the role of high discount rates, and discussions of planning principles were generally kept separate from carbon reduction. This culture can be challenged however. The acceptable grounds for project proposals, type of motivations questioned and unquestioned, norms of dialogue, extent of interdepartmental co-ordination, can all be influenced by well connected individuals within local government, and by pressures from outside, including public pressure.

All councils were keen to reduce their costs, but the enthusiasm with which efficiency gains were identified, capital raised or strategies devised were markedly greater in councils where there was a widespread and explicit recognition of the likely impacts of climate change. This was noticeable in the Labour controlled urban authorities, but to some extent also in one of the rural districts less attractive to wind development or tourism. In this area public interest in action on sustainability seems to have had some effect on discussion within the council, but not to the extent of ameliorating the prevailing caution in times of austerity. Generally, councillors are of the view that climate change does not matter to constituents, and if carbon reduction measures have to be paid for they should be justified in some other way, usually cost-saving. This, as noted earlier, excludes larger and long term measures.

There was a much wider range of attitudes to climate change in Conservative than in Labour councillors, though Conservatives were on the whole less sympathetic to vigorous mitigation strategies. Party dominance of authorities may have accentuated differences in approach to carbon reduction. However prior Liberal Democrat control in most of these councils had been accompanied

by very similar contrasts; so underlying attitudes in the corresponding areas seemed to have had a more fundamental influence than party ideologies.

So far I have summarized the findings of this research on the existence of 'implicatory' climate change denial, and the influence it has had, more in some authorities than others, on corporate culture and hence on mitigation policy and action (research question 1). I have also noted findings which bear on its explanation (research question 2). The way in which central government policy can prompt action despite dismissal has been noted, as also the way that sceptical attitudes inhibit action even in the presence of financially viable options. Clearly the distinctive influence of climate sceptic attitudes has been, if not quite a veto, an inhibition to carbon reduction, in some communities more than others. External material and subjective influences interact in the rural case study area in a different manner from the way they interact in the urban context (research question3).

7.2 Theoretical implications of the findings

Influences upon carbon reduction action included factors suggested by several of the theoretical approaches explored in Chapter 1. Climate change dismissal was frequently encountered, and could be explained in several ways:

i) through rational choice, that is, the pursuit of local short term interests in a context of felt lack of influence over determinants of climate change (in the same way that policy makers do not attempt to influence the timing of volcanic eruptions), or

ii) by way of 'bounded rationality', with attention and resources allocated according to short term and immediate financial and political pressures, or

iii) By the protective mechanisms of denial, a socially organized process which has both individual and organizational levels.

The attitudes I have reported certainly give support to theories of denial, as elaborated by Norgaard, Stoll Kleeman, Hoggett and others. A close reading of the interview material with a psychosocial perspective reveals strong evidence of what Rowson (2013) calls 'stealth denial' and Cohen (2000) 'interpretive' and 'implicatory' denial, acknowledging in some degree the existence of, and in most

cases the human contribution to, climate change, but denying any affective response or responsibility in connection with it. Discursive repertoires appear which are linked with disregard either for climate change as an urgent problem or for the possibility of action to combat it. Statements are made which, I have argued, are better understood as strategies for maintaining a positive self image or justifying a worldview or ideological outlook, than as expressions of belief or ignorance.

However I differ from authors such as Norgaard and Stoll Kleeman in taking a more varied interpretation of statements of helplessness and powerlessness. In this study I do not assume that they are evidence of denial. Psychosocial analysis looks at statements in the light of the affective as well as the verbal dimension and in the context of meanings within which they are being deployed. While some respondents' expressions of powerlessness appear as strategic, and seem to be mustered among Norgaard's 'tools of innocence', others, occurring in a context of some (if limited) relevant action and with expressions of concern, regret, or anxiety, may accurately convey the barriers which prevent more dynamic action being taken.

There may be no contradiction between denial/bystander theories and those of rational choice approaches. The difference is between those who think denial and passivity is a response to a powerlessness to effect real change, or perhaps to high risks of action compared with a small chance of positive achievement - between this and the view that psychological factors such as denial result in inaction. There is no question that peoples' responses are mediated by emotions, identities and narratives. But if we believe the first proposition, then, denial or disavowal is a facility which reduces pain and suffering in the face of helplessness or threat; if the latter, psychological defences against painful awareness really do prevent the identification of dangers and challenges, identification which could then lead to the development of alternatives which would be preferred under rational choice theory. Both of these seem to be represented in the views expressed by respondents.

Distinguishing which of the hypotheses have the greatest causal significance is extremely important. I have argued that lack of agency is central to inaction on climate change. If this is so, neither information nor addressing anxieties and denial will be effective, whether for local authorities or individuals. The priority given to local adaptation measures (where benefits for the local population

are evident, ie agency is substantial) suggests that authorities are pursuing their own and their constituents' interests as suggested by rational choice approaches, and it is the sense of powerlessness over climate change which explains the lack of priority to reducing greenhouse emissions in mitigation (other than energy saving and cost reduction which are undoubted goals of policy).

In this situation regulation, incentives and other rational choice related measures will be more effective. What may also be effective are cultural initiatives which alter the calculus of impotence, and which make inroads into cynicism about 'human nature', other polities and wider climate change policy, and allow some basis for the presumption that one is participating in a coordinated effort. Changing the cultural parameters within which more or less rational choices are made is a more subtle undertaking than changing the institutional framework, and this is the import of the conversations which environmental NGO's and the Royal Society of the Arts are increasingly advocating.

The institutional setting, including central policies which affect the material incentives for carbon reduction or the lack of them, does have an important cultural spinoff in that it affects both the calculus and the conversation. Target setting and financial support are 'hard' interventions but they also introduce language in which it is more universally acceptable to discuss carbon reduction policies. Both 'hard' policy changes and cultural initiatives play a part in reducing the strength of climate dismissal, whether psychological drivers are primary inhibitors to effective carbon reduction action, or whether denial is primarily pain relief in a rather hopeless situation.

Thus, policy changes affect both rational calculus and psychological determinants of action. Cultural approaches – promoting and facilitating conversations and usefully containing anxieties and fears about the future – have the potential both to lessen climate change dismissal and to influence the operation of so-called rationality, the way in which people see the advantages of carbon reduction measures bearing in mind impacts on themselves and their local community. These findings have implications for leadership, both at a national and a local level. Chapters 5 and 6 include examples which show that leadership in taking on some of the initiatives I have referred to as 'cultural' has been found at many levels and not always in the most likely places.

7.3 Methodological reflections

The findings of this study do provide a fairly consistent insight into some of the overarching factors affecting local authority endeavour and achievement in carbon reduction; these findings are confirmed by those of other studies (Committee on Climate Change 2012b, Green Alliance 2011). The qualitative nature of this research, besides providing detailed evidence on attitudes to climate change in local authorities, produces the new finding that national policy is effective not only through changing regulation and incentives, but also because it affects language, discourse and culture within councils (factors which also vary independently). It is likely these findings have wider applicability.

Two of the main limitations of this research are its geographical specificity; and the bias in the selection of respondents. These factors limit the scope of the conclusions I have been able to draw about attitudes to climate change and the relative importance of local influences on policy. The study was restricted to authorities in the South West, in many of which "the environment" is high on the list of priorities, though not always in a way conducive to carbon reduction, since the quality and appearance of the local environment is perceived as a key economic asset. It cannot be assumed that authorities in more urban and metropolitan settings assign carbon reduction to environmental health departments as is often the case in the South West, or share the same concerns about renewable installations impairing environmental quality. Political factors are different in flat places from those in hilly places, and sensitivities vary in different populations.

In Chapters 2 and 6 I have discussed the extent to which the likely under-representation of climate change sceptics in the sample has affected the study. As a qualitative study, the depth of data gathered does allow insight into relevant attitudes to climate change and carbon reduction policies. These insights do not depend on the numerical balance of the sample, but findings might be more secure and detailed had larger numbers of respondents in this category been included. The balance of the sample represents a response to the initial request which included sustainability among the stated foci of the study. A more balanced sample would have had to conceal more of the purpose of the research. The inclusion of more respondents in senior positions would also have been desirable.

The interview method seemed appropriate for the task, but separation of the interview setting from the work setting was rarely achieved and is likely to have limited the scope and depth of the

conversations. However this did not prevent detailed, expressive and even rambling conversations with respondents, offering ample scope for the use of psycho-social research methods, even if the potential of these methods was not fully exploited in this study. The analysis of interview data has proved extremely revealing; the psycho-social methods helped to relate statements and attitudes to respondents' positioning of self and others, to their sphere of agency or lack of it, and their manner of dealing with emotive topics in a social setting. Some of the boundaries to conventional discourse within discussions of policy could be identified, and the slightly edgy nature of the positions and identity labeled as 'green' emerged.

The research could also have been strengthened with the incorporation of focus groups into the process. It was hoped that feedback sessions would provide some discussion of this kind, but respondents did not take up this opportunity, possibly related to the fact that time is one of the scarce of resources in local government following a period of staff cuts.

Further research might extend these findings by including a wider geographical spread; by enabling interviews to take place in a more relaxed and informal setting unconnected with work; and by enabling further exploration of the (inner) conflicts encountered where respondents are aware of and concerned by future climate change scenarios but where corporate culture frames policy decisions in terms of local or organizational advantage and in economic terms. It would be desirable for such research to be useful to the respondents themselves in dealing with such conflicts.

This study has not included policy on adaptation to climate change, which in local government appears to be less controversial than mitigation, except where the latter involves cost cutting; though adaptation policy raises many practical issues. However it would be interesting to discover whether the 2014 floods in Somerset and elsewhere, and ongoing experience of impacts of extreme weather events, in focusing attention on the need for greater adaptation, may also have affected attitudes to climate change in general.

7.4 Policy Implications

7.4.1 Conversations about difficult issues

Foremost among the conclusions of this study is the need to facilitate more conversation about climate change in the context of practical decisions (cf Rowson 2013, Corner 2013a, Ashton 2013). Just as these authors note that constructive national conversation about responses to climate change is remarkable by its absence, such conversations occur in few local authorities, although more seem to have engaged in such discussion in the past.

By contrast, there is an ongoing conversation and awareness at national and at local level about resource depletion and energy security, and the need for a resilient energy supply policy. There are dangers in this conversation being carried on without reference to climate change, and much to be gained from considering the two areas of concern in relation to one another, so that proposed solutions can improve both aspects of the energy situation

There is ample evidence that conversations about climate change are not easy, and therefore the links between this conversation and the goals of organizations and government remain unexplored. Positive steps to enable such conversations need to be taken, and can be taken both from within local and national authorities by individuals with enough clout, and by political and citizen groups from outside government. Leadership which recognizes the difficulty of the problem and enables responses but does not make implausible promises is needed.

There are some outstanding examples of how this has been enabled to take place, through cross-party initiatives among councillors (eg in Woking), activities organized by officers (for example film showings) and through the initiative of outside interest groups, such as the series of workshops offered to all Taunton Dene council employees and members of the public by Transition Taunton. It is rare in any case for the personnel of an authority, from portfolio holders to cleaners and gardeners, to be present in the same room, and the novelty was apparently appreciated in this case, improving communication and leading to fresh ideas on a number of unrelated areas.

Public and community organizations outside local government, as well as individuals within it, have at times been able to influence directly local authority action on carbon reduction by promoting or

preventing specific actions. This research shows however that influence can be as strongly exercised by promoting conversations and enabling climate change and related policy to be talked about (as in Weirbridge), circumventing habitual avoidance and raising questions about the future, in a way which does not provoke polarization.

Much can be done to foster conversations about climate change which avoid the tendency to emotional distancing on one hand, and the tendency to induce guilt and anxiety on the other (though this cannot altogether be prevented). Such a conversation is likely to be most effective if it avoids highlighting points of difference, focuses on resilience and realistic measures which can be undertaken by shared effort. Marshall (2014) suggests a unifying discourse on how unselfishly people have worked together to overcome crises (resulting from floods for instance) and how, working together, communities can become more prepared, resilient and independent.

On a wider front, the lack of information about climate change and mitigation policy will only be remediable if members and officers, like others, have grounds for trust in the actions of others like themselves, and that their efforts will form part of a local, national and international pattern of action to mitigate climate change.

7.4.2 Recognizing the role of values

Value positions are reinforced by being stimulated and weakened by the stimulation of opposing values. Morals and values which favour the public good are easily mobilized in times of war in the cause of national service. It is also these morals and values which distinguish rescuers from non-rescuers in Nazi-occupied Europe and active interveners from bystanders in civil emergency situations. Countercultural in our present social climate, a greater recognition and stimulation of values related to common humanity may not be fruitless. These are institutional changes in the very loosest sense, but can nevertheless be fostered in a purposive way as, for example, in the pressure brought to bear in the 1980s for disinvestment in South Africa under apartheid.

7.4.3 Incentivizing and funding carbon reduction

Collective choice dilemmas inhibit action both by individuals and organizations; that is to say their immediate incentives, both material and non-material, point away from action in the common good. Institutional changes are needed to overcome these choice dilemmas whereby the outcome in the best interest of all is neglected. Both values and incentives can play a role.

Positive action can also be helped by the alignment of material incentives with policy goals for decarbonization. In general, price signals and the returns to investment could favour low carbon solutions, thus using market mechanisms to transmit information about real social impact. In the case of local authorities, all major financial incentives limit aspiration for carbon reduction to minimizing costs and invest to save projects. Both planning guidelines and investment appraisal would need to be aligned with this goal, the latter either by a realistic carbon price or by allocation principles for dedicated investment funds (as in the SALIX programme).

Austerity provides a clear incentive for cost cutting, which includes reducing the energy required for given activities. These incremental gains in energy efficiency will remain should expenditure again increase. However, more than incremental reductions in energy use are needed to meet the targets in the Climate Change Act. If these are to be taken seriously, larger investments will be needed in both energy supply and demand reduction, than are currently contemplated. Councils will carry out some of these investments on their own estate if they have a financial incentive to do so. At the moment both austerity and risk aversion make this unlikely. Many councils are also in a position to work much more widely and creatively towards reducing the emissions from their geographic area, for example being prepared to invest in partnership with energy companies in Combined Heat and Power (CHP) plants[1], home efficiency improvements, advice and support for businesses in this field, and supporting the low carbon sector of the economy. Thus greater access to finance for carbon reduction projects could also enable more rapid movement in this direction.

[1] Combined Heat and Power plants reduce emissions provided they are not moving towards reliance upon imported biomass derived from clearcutting old growth forests in Canada and elsewhere. Unfortunately this fuel source is currently classified as renewable energy under EU rules but there is no reason why the climate impact of such fuels should not be accurately calculated for project appraisal.

The findings of this research therefore echo those of the Committee on Climate Change (2012a and b), that with appropriate incentives and/or regulations which make mitigation measures mandatory, local authorities can make a much bigger contribution to carbon reduction than is currently the case.

In practice it is likely that regulatory requirements or incentives would be ineffective without increased availability of funds for carbon reduction projects, and on low-cost terms which would not deter longer term investment. This could be achieved in a number of ways.

i) A specific infrastructure fund offering further grants and finance to councils on concessionary terms for long term carbon reduction investments.

ii) Allowing councils sufficient control over their receipts (such as business rates and rent income) to enable them to increase borrowing on commercial terms. Greater autonomy for local authorities in the use of their own finances is being considered for cities, and this would be advantageous for climate change mitigation. In the field of housing, allowing local authorities the same freedom as private developers to raise finance and use their own revenue for development would enable the provision of more affordable housing of the required size and energy efficiency; and would help relieve councils of the unenviable choice of using more of their revenue to support claimants subject to cuts in housing benefit (the 'bedroom tax'), or allow increasing numbers to become homeless in the absence of sufficient affordable housing (including one bedroom properties) for their needs.

A longer term perspective on desirable national investments across the board would need to be accompanied by Treasury discount rates which reflect a higher valuation of future benefits in a world of energy scarcity. At another level, a long term perspective is needed to assess and pursue benefits which cannot be realized through the processes of the market, or the proto market mechanisms used to guide public investment.

7.4.4. Planning Framework and operational definitions of sustainability

Unfortunately in the period under consideration, financial incentives for local authorities have favoured development which is very far from sustainable. The definition of sustainability in the NPPF document includes the phrase '*without compromising the ability of future generations to meet their own needs,'* but this is not translated into operational definitions whereby planners could distinguish development which is sustainable in this sense from that which is not. An operational definition of sustainability could be included in the NPPF on the basis of which planning decisions would be sustained on appeal. This would strengthen the bargaining position of local authorities, enabling them to negotiate development which is more consonant with national greenhouse emissions targets. Changes to the New Homes Bonus could also be used to incentivize development compatible with this target.

Building regulations have until recently progressively tightened environmental standards, although raising the standard for housing, once projected to be zero carbon by 2016, has been abandoned. An alternative, chosen in at least one of our respondent authorities' housing projects, is to meet the passivhaus standard. Social housing projects have been built to this standard for some 10-15 per cent additional cost compared with that for meeting current regulations (Gale and Snowden 2011), but in 2014 there were plans for further social housing projects to meet the passivhaus standard without a cost premium (Gale 2014)

7.4.5 Energy and procurement policy

Changes in energy policy and in retrenchment of programmes such as ECO (compulsory contributions from energy companies towards energy efficiency) also impact upon local authorities, both as an indication of the priority which central government places upon climate change mitigation and through their impact on funding available for energy efficiency and the revenue from generation projects. A clear steer from central government about the priority with it places on the reduction of climate impacts might also energize efforts in local authorities to work together with local businesses to develop the low carbon economy, a sector which has grown rapidly in recent years, even in times of recession. Both local authorities and central government can give greater encouragement for the

low carbon sector and for reducing emissions from supply chains by designing procurement policies with this end in mind.

7.4.6 Measures within councils

A number of other suggestions from respondents were reported in Chapter 4 as to how authorities could more effectively reduce their greenhouse emissions. These included:

i) Allowing retention of savings arising from investment in energy efficiency for further investment in carbon reduction

ii) A more discriminating approach to waste recycling, to try and increase the recycling of the most beneficial elements in the waste stream in terms of tons of carbon saved thereby. Aluminium, all metals and plastic, and paper rank high on this list, glass less so. Efforts could be made to minimize the amount of garden waste which, at present, is transported long distances to maximise the recycling rate.

iii) Ensuring cross-cutting commitment to low carbon policies and overcoming departmental differences in implementation

iv) For education authorities, initiating more collaborative work with schools on carbon reduction measures, regular meter readings etc, integrating this 'for real' practice into the education syllabus.

v) Raising the priority of public transport improvements and other measures to reduce greenhouse emissions from transport. Electric vehicles were seen by some as the way to reduce transport emissions, though at present they are only 'neck and neck with the most efficient "fossil cars"' (Hickman 2011). If renewable generation were proportionately increased, their advantage would be greater. In terms of energy security – another matter of concern for respondents – this would be a positive step.

Thus, the findings of this research, in contrast to perceptions of powerlessness and lack of agency, indicate that there is scope for action at all levels to progress carbon reduction and climate change mitigation, even at the level of some individuals within and community groups outside local authorities. The potential for change is in fact weighted heavily towards national government

measures; but even changes at this level typically follow pioneering examples from particular localities and authorities.

One of the most compelling findings concerns the way in which policy measures to offer practical financial support for carbon saving, or regulations and targets in this area, change the terms of discourse as well as incentivize action; and, conversely, the way in which changes in the culture of an organization can alter the way in which its members think about the benefits of local action. As things stand, the impact of austerity and the resulting curtailment of local authorities' financial discretion has left them more introspective, demoralized and risk averse. Some change in the opposite direction will be needed if they are to take a leading role in shifting their local economy and society in the direction of a low carbon and more energy secure future.

Appendix 1: Interview protocol

Name Date……
Contact details
Organization
Position

Initial statement on purpose of interview, safeguards, and permission to withdraw.

Employment and life

1. How long have you lived in Devon?

2. Could you tell me more about how you came to this work?

If relevant ask how long in this organization; how long in this role?; do you have family?

Priorities at work & sustainability

3. Speaking as (member of party, occupant of position or job) what would you say are your main priorities? (Issues which you deal with which you feel are most important?)

4. (*If not mentioned*) Do considerations about sustainability, carbon reduction occupy you?

5. Does this organization assess it's performance in sustainability? Or the sustainability of a proposal ?

   If so, in what ways? What is measured? What criteria applied?

6. In your own area of work, what are the main environmental impacts?

Stories

8.. In your organization, from the point of view of sustainability, can you tell me about a success?

What made this possible?

So, in your organization, what works well to promote carbon reduction or environmental good practice?

9. In your organization, which are the areas where carbon reduction tends to be overshadowed by other considerations?

Can you give me an example?

Views about climate change

10. I'm interested in your own personal views about climate change and environmental issues.

Here are some statements made about climate change in the media – could you tell me what you think about them? *(Introduce statement cards)*

11. What sources of information would you trust about this issue? (For example, is there a newspaper or a film or a statement that you feel gets it just right?)

12. When you think of nature (the natural world), what images do you think of first?

13. When you think about climate change what images come into your mind?

Hopes and fears

14. Thinking, as a private person, about the future and the various scenarios of change in the world, what are your main fears and hopes?

15. Do you talk about your concerns or worries? (Who do you talk to?)

Policy

17. What change would you suggest which would improve environmental practice in this organization?

19. Who in (this organization) do you see as most **i**nfluential about the kind of things we have been talking about? Is there anyone outside the council who is very influential?

20. Looking at policy now, if there was any change in national policy which would encourage a reduction in emissions what would you suggest?

21. Is there anything you'd like to ask me?

Appendix 2: Card Statements

Global warming is a hoax. That conclusion is supported by the painstaking work of the nation's top climate scientists – US Senator Jim Inhofe July 28 2003, Senate speech.

The current global warming is mainly a natural occurrence and there have been many previous episodes in earth's history - Film-maker Martin Durkin, in The Great Global Warming Swindle, C4 documentary 8th March 2007.

The science on global warming is doubtful and it is not proven that warming is human induced- numerous. In one research analysis, quoted in Al Gore's The Inconvenient Truth, 50% US news articles on climate change were sceptical about human-induced global warming, while very few articles in peer reviewed journals questioned this hypothesis.

Climate science is largely settled and shows that global warming is occurring and "very likely" (95% probable) caused by human activities. "Global warming is very likely due to the increase in anthropogenic greenhouse gas concentrations" *IPCC AR4 Summary for Policymakers*, Intergovernmental Panel on Climate Change, expert assessments of research worldwide. http://ipcc-g1.ucar.edu/wg1/Report/AR4WG1_Print_SPM.pdf.2007

Climate change is a long term problem and will have to be dealt with mainly by the generation who are now children - often assumed.

Climate change matters for people in the UK today

Climate change is the most severe problem we are facing today - more serious even than the threat of terrorism - Sir David King, former UK chief scientist

Environmental refugees are already leaving areas becoming uninhabitable due to climate change – Mark Lynas *High Tide* 2006

Resource depletion means that we have to reduce fossil-fuel dependence regardless of climate change policy. This statement summarizes the 'Peak Oil' position, eg"In fact, global oil production has probably already entered its terminal decline and coal and gas extraction will likewise do so in about 15 years Because petroleum has been the driver of most economic expansion during the past few decades and there is no ready substitute for it, peak oil basically means the end of economic growth as we have known it"- Richard Heinberg Museletter 212: The Meaning of CopenhagenJanuary 4, 2010 http://heinberg.wordpress.com/about/

A cap at 450 ppm CO2e offers a 50/50 chance of limiting global temperature increases to 2°C. Intergovernmental Panel on Climate Change 4th Assessment Report, Working Group I report: Climate Change 2007: The Physical Science Basis (Cambridge University Press, Cambridge, 2007), chapter 10, Supplementary Figure S10.4. (page Sm.10-8), (This figure uses a range of parameter choices, and shows that 450 ppm stabilization has a medium (neither likely, nor unlikely) chance, or around 50% chance of staying below 2°C.)

350 ppm is a safe maximum level for CO2 in the atmosphere - James Hansen, formerly of America's National Aeronautics and Space Administration. the first scientist to warn about global warming more than two decades ago, wrote recently, "If humanity wishes to preserve a planet similar to that on which civilization developed and to which life on Earth is adapted, paleoclimate evidence and ongoing climate change suggest that CO2 will need to be reduced from its current 385 ppm to at most 350 ppm". Rajendra Pachauri, IPCC chair and Nobel Prizewinner, agreed.

The amount of carbon dioxide that can be absorbed [by the sea and by land plants] decreases as temperatures rise. We will reach a tipping point from which temperatures will go up even faster – summary of points made in David Sington BBC documentary on Global Dimming, 2006

A 4°C rise in temperature could occur in less than 50 years - Kevin Anderson. "At 650ppm, the same fuzzy science says the world would face a catastrophic 4°C average rise." *Too Late – Why scientists say we should expect the worst – David Adam* Guardian report on scientific conference at Poznan, 9 Dec 2008.

There is not much that one individual can usefully do about climate change
Our organization can play a part in responding to climate change
These statements were included to give participants an opportunity to talk about their sense of agency or lack of it.
I am contented and confident that my grandchildren will inherit a good future – Statement included to invite views about the future.

Appendix 3: Initial contact letter

Dear ……..,

I am writing to invite your participation and request your help in a research study on constraints to sustainability among decision-makers in local government in the South West of England. I am a PhD student at the University of the West of England, Bristol, based in the Department of Politics, and my study is to explore how decision-makers in organizations deal with conflicting goals, and what problems arise over decisions affecting sustainability. Councils are among those key organizations with demands from central government both to save emissions and to perform on many other targets. It is hoped that the results of this research will throw light on how policy in this area can be more realistic and successful, and that it will be of interest to the participants themselves and similar decision-makers in other areas.

The study method will involve a confidential interview, lasting about an hour. The interview will be recorded, and will look at achievements and difficulties in the fields of energy efficiency, resource use and emissions reduction, the impact of central government regulation and local authority policies, and personal views and insights about the opportunities and difficulties or reducing emissions. By agreeing to take part in the study you do not commit yourself to answering any question you do not wish to, and you can withdraw at any time without giving a reason.

If you would be willing to give your views in an interview, I will contact you to arrange a time at your convenience, and I will send a formal letter explaining the way data will be handled , data protection safeguards, and details about how the study findings will be presented.

The information from the study will be confidential to the research team. In any written output, information will be reported without quotation of sources, and identifying details removed or changed, so that individuals and organizations remain anonymous.

You will be invited to a seminar at the study's completion at which the findings will be discussed. Please let me know if you would like any further information.

Your help will be much appreciated.

Gill Westcott

Contact details

Appendix 4
Some I-Poems

Charlotte I-poem

Charlotte is a senior councillor in a city council.

I was in on '79.
I came in.
I've done, I think, 38 years
I've almost never won my seat by more than about 39
Then in the last 3 times I've stood it's gone into the hundreds

I'm a city centre ward
I've always thought that the services we give [are central]
I have to balance that with
I think the more you're on the council the more you have to look at a broader field.

You'll get myself, who's a professional in hoteliers and pubs
I knew this, that tourism has to be the key to it
I don't think we've been selling ourselves sufficiently
I think the penny has dropped in recent years
I've always argued that fact.

I've been on planning nearly all my time
I've been on all the committees, but that's the one that claws in more than anything
I've seen very poor quality

I tell you, if you give people flats [with no storage]
I've got an old Grade 2 property, like a Dutch house
I come from the hotel trade
I have two sons who live in Cheltenham
I notice people are using their balconies for storage

I am not a person who sees bikes as being a forerunner
I see it as absolutely it should be there
I must say in past years.. - it's not an issue for me now
I used to ride a bike many years ago
I deemed myself wrong on that one

I would support that
I mean even if we were in power we'd carry on at it
I – myself and the leader of council – always opposed
I did oppose it
I thought there wasn't sufficient
I was worried

I'm not too happy with wind turbines

I don't think they're worth it
I think wind can be used from the sea.
I think you would destroy what we've got
I think you could do more investing
If you're sensitive to noise –
I'm one of those people I can tell you
I just don't sleep
I just sleep 4 hours a night
I don't have her brains (laughter)
I think there's other ways of looking at it
I don't think we've found it yet
I'm jolly sure
I just don't know
I think one should
I don't think we should see these wind turbines on land.

I disagree with that
I've always said I think there's a possibility

I love watching those programmes
I remember my mother saying

I do think that the fossil fuels can't go on being taken
I have 6 – 2 in New Zealand and 4 in Cheltenham
One thinks of their – but I tend to be realistic
How realistic is it? I don't know
I hope I've got some common sense

You're going to have to try and get it from the private sector
I cannot see anything wrong with that

I wouldn't say I am terribly green
What I'm trying to say is, I view it as more common sense
I'm not against anything if I can
What I am against is if somebody pushes
I would want to know why

I've always believed, horses for courses
I started to investigate how much goes abroad, of landfill
I was blamed for my people that weren't picking up enough
I believe in city centres like we have..you need a weekly pickup
I know it as a woman

One feels one should do more
I don't feel that
But I don't feel that. I can live with myself. I know what I've done, I know what I've been.
I don't like the forests being burnt down for the sake of earthly gold or whatever. That I do object to
I fear that we could do more, and I think science could do more

I love Egypt, and I look at it at the moment, and think, God
I love what they did at the time it happened to civilization, 2000 years
I sit in awe of that, I must admit. I think a lot – I think out of sight, out of mind

I jump up and down about homelessness
And I think, I've done my bit. I had a young lad
So I took one on, no money whatsoever, I didn't want any money
I mean, if you're in the hotel trade, one more doesn't make any difference
I really get a bit annoyed about
I would dearly like to say what I'd done with [N]
No, I've done my bit
And that's where I'm all for things, I'll come out fighting,
And you suddenly stop, and you think, did I help?
Yes, I did help!

I love it – it's a lovely, lovely country… I thoroughly enjoy it
I've done the centre, I'd like to go up to the tea plantations, do the train…
I've done Katmandu, love Nepal, I really do, love it
I mean, you're fairly tall and I'm fairly tall
but I'm talking 20 years ago. I'd like to go back

As I said to you to begin with, we're never in a hurry down here
I think we are on board.
I think we are on board
well I'm born and bred, so there we are
Anyway, I'm sorry I've kept you

Gerard I-poem – excerpt

Gerard is a senior councillor at County and District level.

What I would like to see
I'm a bit cynical I'm afraid
but, for myself, even with my own party, I think I'm pretty much to the more radical section of, of environmentalism
To play a straight bat as far as I am able
I think you've got the micro and the macro here
The most recent one I've given is much bigger
I've just given a tiny sum

I mean I'd like to think I'm in favour of integration
I've just bought a new boiler for my community centre
Which I insisted was of certain ecostandards

I spent money
I spent money
I've given them many hundreds of pounds

I'm doing what I can (to promote sustainability)
The last thing I did as..
I got the sense that
That's the impression I got

I suppose
If you get me on the South Devon Link Road we'd probably be here a long time
My own position is
The last green lung, as I call it, will disappear

I just see it as
I'm not involved
If I ramble off the point now bring be back
I was extremely fortunate
I went to Munich
The one point I'm getting round to making
I think that's something our society should take on board
I've been badgering
I was told a couple of months ago that it should be up and running by now
I rambled off about..
So many things I could share with you, some of which I've tried to bring back

I've tried to get this written in
I've tried getting the officers
All those things are what I want
I opposed that
I don't think that's good use
I've suggested that

I'm not professionally qualified
It's always something I've felt very strongly about
Hence I try….

You want to try and represent your constituents
I could give you dozens and dozens
I hope I'm not like that
You have to be true, I think, to your own views
I'm out on a bit of a limb
I think, I'm sure I can justify that position
I can justify it to myself
I can justify it to anyone
So I'm clear where I'm coming from and what I believe in
If that upsets people I'm sorry about that cos I don't want to upset anyone, but

I'm a conviction politician
I'm desperately keen to represent my people and help them every way I can but
I can't give ground on this
I don't care what my party says

I don't know whether you are a member of

I served on a working party that came up with that
I would want to advocate
I tried to introduce
I'm sure you're aware of

I never understood
I don't know
I produced
I wanted to see incorporated
I don't know there comes a point where you can only
I was trying to get done
As I believe, we're facing
I don't think society's prepared

Well, I'm a human being, you can only do so much, chasing up and through could be a lifetime's job!

I'd be a bit cynical
I just want to leave behind
I know it sounds hackneyed, I know it does
I don't think many have that view on life
I'd like to think
That's one of the reasons I'm in my party
Don't get me wrong I don't want to be poor
I think we're reaching a point
I think the onus is on local authorities

Alison I poem - excerpt

I've been with the Council for 35 years,
but I've been in this particular post for ten years.
I've been involved in environmental and sustainability issues
I think probably planning
I've been involved with the big project
I've been involved with making changes
I would say those are probably my main preoccupations
– I can't say simple
sorry I've forgotten your question,

I'd say that even now, if something's got a payback of a few years, it'll be funded,
I can't think of one off the top of my head
partly I suppose, two things which interlink
I don't know whether somebody in the policy unit will know
I will think
I'm surprised if
as I say a lot of it has just fallen by the wayside
without knowing the detail I can't know

I mean we've got a long, a very long history

I think the council would really like to
I don't know if you know
I think that was quite brave politically

I can discard that one immediately
Is this what you want?
I don't think it's natural
I actually can't remember the figures, I don't know whether that's right or not
I read the Guardian and not the Daily Mail, so..

I imagine they probably are
So I'm not being very systematic about the things I'm telling you
I think the conversations that I've experienced
I think people struggle with the future
and I wrote quite a lot about climate change, it was quite a big issue
I mean I struggle with my children

I would suggest external financial incentives
I think that's really effective

it's been one of the frustrations for me personally
I mean, I do think X is good, and he does think beyond that
But it is very frustrating I think
I think it would be naïve to really expect it to be the politicians

John I-poem - excerpt

John is a Greenleigh district councillor with a farming background.
I've never been out of the South West in my life
I have 3 sons and not one wants to go farming
I've got a wife who works in the Health Authority.
I could earn 200 pound a month and she could earn 220 pound a month, then.

My concern, I have to say, for the future, is not for the rural economy,
I think there will be a crunch
that's how I feel about it

I'm an Independent.
I am nonpolitical. But I'm quite political.
I'm probably left of centre. OK?
I come from the West Country nonconformist Methodist tradition
I mean if you go round the countryside

I've got many friends where
I said to them, about 20 years ago now,
I knew some Jerseys

So that's where I am, and place is very important

I'll be Karl Marx if you like,
I'll be Milton Friedman if you like,
If we can get a bit more money into [Greenleigh] I'll put on any clothes you like.

Jack I-poem, excerpt

Jack is the leader of a minority Conservative administration in Greenleigh and younger than most other councillors. He takes control of the interview straight away.

I've lived in the district all my life, born and bred,
I'd never been in this building.
So the reason I'm telling you this is because, I believe that em pticly following your comments about em.. green issues and er that type of thing,
I don't care whether somebody stands as a LibDem, a Tory, a Green, UKIP whatever.
What I want are good people

I just don't know. I'm not qualified enough to know, I'm not a scientist,
I mean the road where I live, I was able to get out [in the snow] with a 4 wheel drive and tractors, but I hear lots of people saying well, there's no bloody global warming here
I've heard various members in Council debates stand up and say exactly that. No, its all a lot of Tommy old rot

but I think there are other things at the minute actually that are more important
it'll be all right in a minute, some time, two, five years, ten, I dunno, because that's what history tells you isn't it?
I do think climate change is on the back seat at the moment
I think there are a lot of things we all can do
But I think there's been a real step up in the last 30 years, the last generation

As far as I'm aware it i'n't happening in the South West and it i'n't happening in the UK.
although I do me bit to support anyone in the world, they are really the most important to me,
so I wouldn't really know

References

Adam, David 'Confidence in climate science remains strong' *Guardian 11 June 2010* http://www.theguardian.com/environment/2010/jun/11/confidence-climate-science-poll

Aggerr, D. Goldrich and B. Swanson, (1964) *The Rulers and the Ruled* Wiley , New York.

Alford, C.F. (2001) Leadership by Interpretation and Holding, *Organizational and Social Dynamics* **2**: 153-173

Anderson, Kevin (2009), *Decision time…face the facts or give up,* Independent, Monday 7 December 2009

Anderson, K. and Bows, A. (2011) 'Beyond Dangerous Climate Change: Emissions Scenarios for a New World', *Philosophical Transactions of the Royal Society*, **369**, 20-44

Angus Reid Public Opinion, 'Global Warming Skepticism Higher in US and Britain than Canada' http://www.angusreidglobal.com/wp-content/uploads/2012/06/2012.06.27_Climate.pdf quoted on http://www.noiseofthecrowd.com/climate-change-opinion-is-now-up-to-pre-climategate-levels/ viewed October 2013.

AOSIS (Alliance of Small Island States)(2014) *Matters of Survival* http://aosis.org/matters-of-survival/ viewed 4.6.14

Archer M.S. (1996) *Realist Social Theory: The Morphogenetic Approach* (Cambridge, Cambridge University Press)

Ashton, J. (2013). Lifting the Lid on the Politics of Climate Change, speech at the RSA, May 2013 http://www.thersa.org/events/audio-and-past-events/2013/lifting-the-lid-on-the-politics-of-climate-change viewed 31.1.14

AXA/IPSOS (2012) International Monitor on Climate Risks http://www.ipsos.fr/sites/default/files/attachments/international-monitor-on-climate-risks-ipsos-axa.pdf

Bachrach, P. and Baratz, M.S.(1962). "Two Faces of Power." *American Political Science Review* 56 (December): 947–52.

Ballard, David (2005), 'Using Learning Processes to Promote Change for Sustainable Development' , *Action Research* (Special Issue on Change for Sustainable Development), Volume 3 Issue 2, Sage Publications Ltd. or from http://alexanderballard.at.zilla.org.uk/wp-content/uploads/2012/05/Using-Learning-Processes-to-Promote-Change-for-SD-final.pdf

Ballard, David (2007), *Mostly Missing the Point: Business Responses to Climate Change*. Alexander Ballard, Bath, and personal communication.

Barasi, Leo (2013) The climate debate has gone wrong – this year that can change, http://www.noiseofthecrowd.com/the-climate-debate-has-gone-wrong-this-year-that-can-change/#more-1499

Barrett, S. and Fudge, C. (eds) (1981) *Policy and Action: Essays on the Implementation of Public Policy.* Routledge.

BBC Climate Change Poll February 2010
http://news.bbc.co.uk/nol/shared/bsp/hi/pdfs/05_02_10climatechange.pdf viewed 8.6.14

BBC News (2013) 'Energy Efficiency' Green Deal launched by government
http://www.bbc.co.uk/news/uk-21226042

Beedell, P., 'Charting the clear waters and the murky depths' in Clarke, S. and Hoggett, P. (2009) (eds) *Researching Beneath the Surface: Psycho-Social Research Methods in Practice*. London: Karnac

Bellah, Robert, Richard Masden, William M. Sullivan, Ann Swidler, and Stephen M. Tipton, (2008). Habits of the Heart: Individualism and Commitment in American Life. Berkeley: University of California Press.

Berger P. and T. Luckman (1967) *The Social Construction of Reality: a treatise on the sociology of knowledge*, Anchor Books, Random House

Betzold, Carola, 2010. 'Borrowing' Power to Influence International Negotiations: AOSIS in the Climate Change Regime, 1990–1997' *Politics* Volume 30, Issue 3, pages 131–148.

Bion, W.R. (1958) On arrogance. *International Journal of Psychoanalysis*, 39: 144-146

Booth, Robert, 'Planning reforms poised to wreck countryside, says Andrew Motion' *Guardian* Wednesday 27th March 2013

Boykoff, Maxwell T. and Jules M. Boykoff. 2004. "Balance as Bias: Global Warming and the US Prestige Press." Global Environmental Change Part A 14:125-136

Buen (2013), *CDM Criticisms: Don't throw the baby out with the bathwater*, FNI Climate Policy perspectives 8, http://www.fni.no/doc&pdf/FNI-Climate-Policy-Perspectives-8.pdf viewed 10.8.14

Bullock S., Childs M., and Picken T., (2009) A Dangerous Distraction: Why offsetting is failing the climate and the people: the evidence, Friends of the Earth,
http://www.foe.co.uk/sites/default/files/downloads/dangerous_distraction.pdf viewed 10.8.14

Bulkeley, H. & Michele Betsill (2005) Rethinking Sustainable Cities: Multilevel Governance and the 'Urban' Politics of Climate Change, *Environmental Politics*, 14:1, 42-63,
http://dx.doi.org/10.1080/0964401042000310178

Bulkeley, H. & Michele Betsill (2013) Revisiting the urban politics of climate change, *Environmental Politics,* Vol. 22, No. 1, 136–154, http://dx.doi.org/10.1080/09644016.2013.755797

Carbon Conversations http://www.carbonconversations.org/ viewed 1.2.14

Carter N. (2014) The Politics of Climate Change in the UK, *WIREs Clim Change* 2014. doi: 10.1002/wcc.274

Carty, T and McGrath, J. (2013) *Growing disruption: Climate change, food and the fight against hunger*, Oxfam, available at http://policy-practice.oxfam.org.uk/publications/growing-disruption-climate-change-food-and-the-fight-against-hunger-301878 viewed 4.6.14

Chatterton, T. (2010) DECC – A view from the inside. Great Western Sustainability Seminars, University of Exeter, November 8th http://www.greatwesternresearch.ac.uk/sustainability.php accessed 23.1.2014

Chatterton, T. (2011) *An introduction to thinking about 'energy behaviour': A multi-model approach.* Department of Energy and Climate Change, https://www.gov.uk/government/publications/thinking-about-energy-behaviour-a-multi-model-approach accessed 23.1.14 and http://eprints.uwe.ac.uk/17873/1/3887-intro-thinking-energy-behaviours.pdf accessed 23.1.14

Cheatneutral (2006) 'What is cheat offsetting' http://www.cheatneutral.com/ viewed 10.8.14

Christensen, Tom, Per Laegreid, Paul G. Roness and Kjell Arne Røvik, (2007) *Organization Theory and the Public Sector. Instrument Culture and Myth*. Routledge, London and New York.

City trader Alessio Rastani(2011) "Governments don't rule the world, Goldman Sachs rules the world", European Watchman3 video available at http://www.youtube.com/watch?v=iPkWNCj6oOw retrieved 12.1.13

Clark, Duncan (2011) *Carbon cuts by developed countries cancelled out by imported goods*, Guardian 25 April http://www.theguardian.com/environment/2011/apr/25/carbon-cuts-developed-countries-cancelled viewed 6.5.14

Clark, Duncan (2012) *Has the Kyoto protocol made any difference to carbon emissions?* Guardian 26 November http://www.theguardian.com/environment/blog/2012/nov/26/kyoto-protocol-carbon-emissions viewed 6.5.14

Clarke, S. and Hoggett, P. (2009) (eds) *Researching Beneath the Surface: Psycho-Social Research Methods in Practice.* London: Karnac

Clements, Ben (2012) Exploring public opinion on the issue of climate change in Britain, *British Politics*,
Vol. 7, 2, 183–202

Local Government Association (2015) *Climate Local*, http://www.local.gov.uk/climate-local viewed 1.5.15

Cohen, M.D., J.G. March and J.G. Olsen (1972) A Garbage Can Model of Organizational Choice, Administrative Science Quarterly, vol 17 no 1 pp1-25.

Cohen, Stanley (2001) *States of Denial: Knowing about atrocities and suffering,* Cambridge Committee on Climate Change (2012a) http://www.theccc.org.uk/news/press-releases/1184-local-government-is-key-to-meeting-national-emissions-targets-17th-may-2012- viewed 13.8.12

Committee on Climate Change, (2012b), 'How local authorities can reduce emissions and manage climate risk' http://www.theccc.org.uk/publication/how-local-authorities-can-reduce-emissions-and-manage-climate-risks/

Confederation of British Industry (2012) 'The colour of growth: maximizing the potential of green business', http://www.cbi.org.uk/media/1552876/energy_climatechangerpt_web.pdf

Cooper, Keith, 'All in the planning? Local authorities go to war over development proposals' *Guardian* 28th March 2013

Corner, A., (2013a) *Climate Silence and How to Break It*, Climate Outreach and Information Network (COIN) Briefing paper, available at http://www.climateoutreach.org.uk/portfolio-item/climate-silence-and-how-to-break-it/ viewed 28.1.14

Corner, A. (2013b) Comment on Hoggett 'Why the World Won't Listen: Problems with a 'Values Approach' to Climate Change', http://www.climatepsychologyalliance.org/why-the-world-wont-listen problems-with-a-values-approach-to-climate-change/

Council on Foreign Relations (2009) *Public Opinion on Global Issues,* New York file:///C:/Users/hp/Downloads/2011_POPCH5aEnvironment.pdf viewed 6.6.14

Crenson, M. (1971) *The Un-Politics of Air Pollution : A Study of NonDecision-Making in the Cities*. Baltimore and London : The Johns Hopkins Press .

Crisp, J (2014) UK urged to drop opposition to binding energy efficiency target http://www.euractiv.com/section/uk-europe/news/uk-urged-to-drop-opposition-to-binding-energy-efficiency-target/ retrieved 29.2.16

Crompton, T (2008) *Weathercocks and Signposts: the environment movement at a crossroads*, WWF http://assets.wwf.org.uk/downloads/weathercocks_report2.pdf viewed 5.5.14

Crompton, T. (2010). *Common Cause: The Case for Working With Our Cultural Values*, WWF-UK http://assets.wwf.org.uk/downloads/common_cause_report.pdf viewed 31.1.14

Cunliffe, Ann L. (2008) *Organization Theory* Sage, London & New Delhi

Dahl, R. and Lindblom C.E., (1953) *Politics Economics and Welfare*, New York: Harper

Dahl, Robert (1961), *Who Governs*, Yale University Press, New Haven

Daly, Herman (1999) *Ecological Economics and the Ecology of Economics: Essays in Criticism* Edward Elgar.

Damro, C. and D. MacKenzie (2008) 'The European Union and the Politics of Multi-Level Climate Governance' in H. Compston and I Bailey (eds) *Turning Down the Heat: the politics of climate policy in affluent democracies.* Palgrave Macmillan.

Darley, J. M. & Latané, B. (1968). 'Bystander intervention in emergencies: Diffusion of responsibility' .*Journal of Personality and Social Psychology* **8**: 377–383

DCLG (2012) National Planning Policy Framework, Department for Communities and local Government, https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/6077/2116950.pdf viewed 6.7.14

DECC/LGA Evaluation of the Low Carbon Frameworks Pilots http://www.cagconsultants.co.uk/resources/Local_Carbon_Framework_Pilots/LCF%20Pilots%20Evaluation%20-%203.%20Project%20summaries%20-%20CAG%20Consultants.pdf

DECC (2010) 'Climate change: Taking Action. Delivering the Low Carbon Transition Plan and preparing for a changing climate'. London: The Stationery Office. Available from https://www.gov.uk/government/publications/climate-change-taking-action accessed 15.1.14.

DECC(2011) Letter from Greg Barker on reporting requirements https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/205724/1712-letter-greg-barker-to-council-ceos.pdf

DECC (2012) 'From Local Carbon Frameworks to Council Frameworks on Climate Change', National Archive, http://webarchive.nationalarchives.gov.uk/20121217150421/http://www.decc.gov.uk/en/content/cms/tackling/saving_energy/what_doing/local_councils/carbon_frames/carbon_frames.aspx viewed 21.4.14

DECC(2013a) *Statistical Release: 2012 UK Greenhouse Gas Emissions*, DECC 28 March 2013, available at https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/193414/280313_ghg_national_statistics_release_2012_provisional.pdf viewed 1.1.14, quoted in Hunt, C. (2013) UK Greenhouse Gas Emissions Rose in 2012 – DECC, *The Carbon Brief*, http://www.carbonbrief.org/blog/2013/03/uk-greenhouse-gas-emissions-rose-in-2012-decc/ viewed 1.1.2014.

DECC (2013b) Policy impacts on prices and bills https://www.gov.uk/policy-impacts-on-prices-and-bills

DECC(2013c) £46 million boost for 132 local energy schemes https://www.gov.uk/government/news/46million-boost-for-132-local-energy-schemes viewed 4.5.15

DEFRA (2008) *A framework for pro-environmental behaviours.* London: Department for Environment, Food and Rural Affairs.

de Groot, J.I.M. & Steg, L., (2008). Value Orientations to Explain Beliefs Related to Environmental Significant Behavior. *Environment and Behavior,* 40 (3), 330-354.

De Gruchy, J. (2013) Led Into Mystery, SCM Press.

Delingpole, J. (2011) *Watermelons: The Green Movement's True Colours*. New York: Publius Books.

Desai, Rehad (2013) *The Weather Gods,* UHURU/Greenpeace, available at https://www.youtube.com/watch?v=62bjhd5TdZI viewed 13.11.2013.

DeSilvey, C. (2012) 'Making Sense of Transience: an anticipatory history', *Cultural Geographies* vol 19 no **1** 31 – 54 http://cgj.sagepub.com/content/19/1/31.short viewed 10.5.14

Dessler, A. and Parson E.(2006) *The Science and Politics of Global Climate Change: A Guide to the Debate,* Cambridge University Press.

Dessler, A. (2012) *Introduction to Modern Climate Change*, New York, Cambridge University Press.

Devon Development Education(2008) Play It Cool: raising awareness of climate change inNorth Devon schools and communities, unpublished evaluation report.

Diamond, J. (2005) *Collapse: How Societies Choose to Fail or Succeed*, Viking.

Dietz, T, Paul C. Stern, and Gregory A. Guagnano (1988) 'Social Structural and Social Psychological Bases of Environmental Concern' *Environment and Behavior* 30 (4) 450-471.

Du Bois J.W. 2007. The stance triangle. In R. Englebretson (ed) *Stance taking in discourse: Subjectivity, evaluation, interaction*, 139-182 Amsterdam: John Benjamins

Dubois, J.W. and Kärkkäinen, E. (2012) Taking a stance on emotion: affect, sequence, and intersubjectivity in dialogic interaction, Text and Talk, 32 – 4, 433-451

Dunlap, R.E. & Vanliere, K.D., 1978. NEW ENVIRONMENTAL PARADIGM. *Journal of Environmental Education,* 9 (4), 10-19.

Dunlap, R. (2008), The New Environmental Paradigm Scale: From Marginality to Worldwide Use, *The Journal of Environmental Education*, 09/2008, Volume 40, Issue 1 p 3 – 16

Dunleavy, Patrick (1991). *Democracy, Bureaucracy and Public Choice: Economic Models in Political Science*. London: Pearson.

Eco-Watch (2012) 'Who are the world's renewable energy leaders', available from available from http://ecowatch.com/2012/who-are-the-worlds-renewable-energy-leaders/ viewed 6.12.13

Elkin, S.L.(1987) *City and Regime in the American Republic,* University of Chicago Press.

European Environment Agency (EEA)(2012) *Greenhouse Gas Emission Trends and Projections in Europe 2012,* EEA Copenhagen, available at http://www.eea.europa.eu/publications/ghg-trends-and-projections-2012/view retrieved 31.12.13

EEA (European EnvironmenAgency)(2012) *Greenhouse Gas Emissions Trends* (CSI 010/CLIM 050) http://www.eea.europa.eu/data-and-maps/indicators/greenhouse-gas-emission-trends/greenhouse-gas-emission-trends-assessment-4#toc-1 viewed 29.4.14

Eurostat (2014) Renewable Energy Report available at http://www.catalyst-commercial.co.uk/key-facts-from-the-2012-eurostat-renewable-energy-report -/ http://notalotofpeopleknowthat.wordpress.com/2014/04/17/eurostat-renewable-energy-report/ viewed 8.6.14

Eurostat (2012) Share of renewable energy in gross final energy consumption http://epp.eurostat.ec.europa.eu/tgm/graph.do;jsessionid=9ea7d07d30dedbf19bac2e76410a9cf3a6bec40d4dde.e34MbxeSaxaSc40LbNiMbxeNbhmMe0?tab=graph&plugin=1&language=en&pcode=tsdcc110&toolbox=type

Floyd-Hunter (1953) *Community Power Structure,* University of North Carolina Press.

Fudge, S., Peters, M. and Wade, J. (2012*) Locating the agency and influence of local authorities in UK energy governance*. University of Surrey, Centre for Environmental Strategy Working Paper 01/12. http://www.surrey.ac.uk/ces/activity/publications/index.htm

Futerra. (2006) *The rules of the game: Principles of climate change communication.* London: Futerra.

Freud, S. (1917) Mourning and melancholia. In J. Strachey (Ed.) *The Standard Edition of the Complete Psychological Works of Sigmund Freud*, Vol VIII (pp. 237 – 258). London: Hogarth Press.

Gale, D. and Snowden, S. (2011)'Rowan House: Affordable, Sustainable Housing for Exeter, *Gale and Snowden*, http://www.ecodesign.co.uk/projects/residential/rowan-house viewed 6.2.14

Gale, D. (2014) personal communication

Geels, F.W. and Schott, J. (2007)'Typology of Socio-technical Transition Pathways, *Research Policy*, 36, 399-417.

Giddens, A. (1999) 'Elements of the Theory of Structuration' in A. Elliott (ed) *The Blackwell Reader in Contemporary Social Theory*, Oxford: Blackwell, p119-30.

Giddens, A. (2009) *The Politics of Climate Change,* John Wiley & Sons Ltd.

Gillespie, Sally (2013) 'Climate Change and Psyche: Conversations with and through Dreams', *International Journal of Multiple Research Approaches*, Vol.7, Issue 13.

Gilligan, Carol, et al (2003) 'The Listening Guide', in Carric, PM and Rhodes, JE (2003) *Qualitative Research in Psychology: Expanding Perspectives in Methodology and Design.* Washington DC: American Psychological Association

Gow, J.I., (2003) Decision man: Herbert **Simon** in search of rationality, *Canadian Public Administration,* Volume 46, Issue 1, 120-124.

Green Alliance (2011), *Is localism delivering for climate change?* http://www.green-alliance.org.uk/uploadedFiles/Is%20localism%20delivering%20for%20climate%20change%20executive%20summary%20-%20FINAL.pdf

Greenham, A. (2011) *The Great Transition*, New Economics Foundation Presentation to Transition Exeter.

Green peace UK (2012), *Scandal – Toxic Plot in the Conservative Party* http://www.youtube.com/watch?v=aTOIHC8zUdE

Hale, Stephen (2008), *The New Politics of Climate Change: why we are failing and how we will succeed,* Green Alliance.

Hamilton, C. (2013) What history can teach us about climate change denial, in Sally Weintrobe (ed) *Engaging with Climate Change: Psychoanalytic and Interdisciplinary Perspectives*, Hove, UK and New York: Routledge.

J. Hansen, M. Sato et al (2008) 'Target Atmospheric CO2: Where Should Humanity Aim', Open Atmospheric Science Journal. (2008), vol. 2, pp. 217-231
Available online http://arxiv.org/abs/0804.1126

Hardin, G. (1968) The Tragedy of the Commons. *Science* **162** (3859): 1243–1248. doi:10.1126/science.162.3859.1243. PMID 5699198.

Harvey, F and Juliette Jowit (2012) UK opposes a 2030 renewable energy target http://www.theguardian.com/environment/2012/mar/11/uk-renewable-energy-target-nuclear-power retrieved 29.2.16

Harvey F (2013) Britain resists EU bid to set new target on renewable energy http://www.euractiv.com/section/climate-environment/news/britain-resists-eu-bid-to-set-new-target-on-renewable-energy/ retrieved 29.2.15

Hastings, A., *et al.,* 2013. *Coping with the cuts? Local government and poorer communities*. [online]. Joseph Rowntree Foundation. Available from: http://www.jrf.org.uk/sites/files/jrf/local-government-communities-full.pdf(accessed 28.2.14).

Hatch, Mary Jo with Anne L Cunliffe, (2013) *Organization Theory*, Oxford.

Hay, C. (2002) *Political Analysis*. Basingstoke: Palgrave Macmillan.

Heartland Institute (2012) Fundraising Plan http://www.desmogblog.com/sites/beta.desmogblog.com/files/%281-15-2012%29%202012%20Fundraising%20Plan.pdf viewed 29.4.14

Heinberg, R and J. Lepow (2010) *The Post Carbon Reader*, Post Carbon Institute and Watershed, Santa Monica.

Helm, D. (2012) *The Carbon Crunch*, New Haven and London: Yale

Hendriks, Frank. (2010) *Vital Democracy: A theory of democracy in action*. Tr R. Stuve, Oxford: Oxford University Press, p126.

Hickman, L. (2011) 'Do electric cars really produce fewer emissions', *Guardian* 17 January http://www.theguardian.com/environment/green-living-blog/2011/jan/17/electric-car-emissions viewed 10.5.14

Hickman, L. (2012) 'Big Energy Users Get Seven Times more Meetings with Treasury than Green Sector' http://www.theguardian.com/environment/2012/jul/23/green-companies-treasury-meetings-energy

Hill, M. and Hupe, P. (2002), *Implementing Public Policy*, Thousand Oaks, CA: Sage Publications

Hindmoor, Andrew (2010) Marsh & Stoker (eds) *Theory and Methods in Political Science* (3rd ed) p42-59.

Hoggett, P. (2009) *Politics, identity and emotion.* Boulder, Colorado: Paradigm.

Hoggett, P. (2012) Paper presented at University College London, November 2012, unpublished.

Hoggett, P. (2013a) 'Climate Change in a Perverse Culture', in Weintrobe, S. (ed) *Engaging with Climate Change: Psychoanalytic and Interdisciplinary Perspectives*. Hove, UK and New York: Routledge.

Hoggett, P. (2013b) 'Why the World Won't Listen: Problems with a 'Values Approach' to Climate Change', http://www.climatepsychologyalliance.org/why-the-world-wont-listen-problems-with-a-values-approach-to-climate-change/

Hollway, Wendy and Tony Jefferson (2000) *Doing Qualitative Research Differently: Free Association, Narrative and the Interview Method*, London: Sage

Home office, UK government(1980) *Protect and Survive*, available at http://scyfilove.com/wp-content/uploads/2011/01/Nuclear-War-Survival-Guide-British-Government.pdf retrieved 12.1.14

Hopkins, Rob. *Localization and Resilience at the local Level: the case of Transition Town Totnes*, Transition Network http://transitionculture.org/shop/localisation-and-resilience-at-the-local-level-the-case-of-transition-town-totnes/ viewed 17.6.14

House of Commons Library, 2014. *Flood defence spending in England*. Standard Note: SN/SC/5755. Available from: www.parliament.uk/briefing-papers/sn05755.pdf *[accessed 28 February 2014].*

Houser, T. (2013) 'Neck and Neck: US and European GHG Emissions Trends', Rhodium Group, http://rhg.com/notes/neck-and-neck-us-and-european-ghg-emissions-trends retrieved 31.12.13

Howell, Rachel (2011) 'Lights, camera . . . action? Altered attitudes and behaviour in response to the climate change film The Age of Stupid', *Global Environmental Change* 21, 177-187

Howlett, M aand Migone, A (2011) *Charles Lindblom is alive and well and living in punctuated equilibrium land* Policy and Society, 2011, Vol 30, Issue 1.

Hull (2012), Situating the Global Environment (2012) available from https://sge.lclark.edu/2012/09/20/percent-of-renewable-energy-produced-per-country-map/

Hulme, Mike (2009) *Why We Disagree About Climate Change*, Cambridge University Press

Hunt (2013) UK greenhouse gas emissions rose in 2012 – DECC, The Carbon Brief, http://www.carbonbrief.org/blog/2013/03/uk-greenhouse-gas-emissions-rose-in-2012-decc retrieved 3.9.13

Huntington SP.(1968) *Political Order in Changing Societies* (New Haven, CT: Yale University Press))

ICM (2012) reported in http://www.guardian.co.uk/environment/interactive/2012/jun/26/guardian-icm-poll-economic-climate-change

Intergovernmental Panel on Climate Change (IPCC)(1990) First Assessment Report (FAR), IPCC, available at https://ipcc.ch/publications_and_data/publications_and_data_reports.shtml#1 viewed 31.12.13

Intergovernmental Panel on Climate Change (IPCC)(2001) Third Assessment Report: Climate Change 2001 (TAR), IPCC, Cambridge University Press, Cambridge UK and New York, USA, available at https://ipcc.ch/publications_and_data/publications_and_data_reports.shtml#1 viewed 31.12.13

Intergovernmental Panel on Climate Change(IPCC)(2007), *Fourth Assessment Report* (AR4) Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA. Available at https://ipcc.ch/publications_and_data/publications_and_data_reports.shtml#1 viewed 31.12.13

Intergovernmental Panel on Climate Change(IPCC)(2013 and 2014), *Fifth Assessment Report* (AR5), , IPCC, Switzerland. Available at http://www.climatechange2013.org/images/uploads/WGI_AR5_SPM_brochure.pdf viewed 31.12.13. Synthesis Report available at http://report.mitigation2014.org/spm/ipcc_wg3_ar5_summary-for-policymakers_approved.pdf viewed 3.6.14.

Intergovernmental Panel on Climate Change (IPCC)(2014) Working Group 2 Report (AR5) *Impacts, Adaptation and Vulnerability: Summary for Policy Makers* http://ipcc-wg2.gov/AR5/images/uploads/IPCC_WG2AR5_SPM_Approved.pdf viewed 29.1.14

Jaeger, C., G. Dürrenger, H. Hastenhoz and B. Truffer (1993) 'Determinants of Environmental Action with regard to Climate Change' *Climatic Change* 23(3) pp 193 – 211

Jackson, T. (2009) *Prosperity Without Growth? - The transition to a Sustainable Economy*, Sustainable Development Commission, London.

Jenkins, G. et al (2005) *Stabilising climate to avoid dangerous climate change – a summary of relevant research at the Hadley Centre*, p16 DEFRA/Met Office Hadley Centre.

Jensen BB 2002: Knowledge, Action and Pro-environmental behaviour, *Environmental Education Research,* 8 (3) 325-334

Jessop, Bob (1990) *State Theory: Putting the Capitalist State in Its Place*, Cambridge: Polity.

Jones, B.D. and Baumgartner, F.R. (2005) *The politics of attention: How government prioritizes problems,* University of Chicago Press

Jones B.D, Graeme Boushey and Samuel Workman, (2006) "Behavioural Rationality and the Policy Processes: Toward a new Model of organizational Information Processing, in Peter, B.G. and Pierre, J. (eds) *Handbook of Public Policy*, Chapter 3, P 50

Jordan, A. And O'Riordan, T. (1997) *Social institutions and climate change: Applying Cultural Theory in Practice*, Centre for Social and Economic Research on the Global Environment University of East Anglia and University College London http://www.cserge.ac.uk/sites/default/files/gec_1997_15.pdf viewed 6.6.14

Juniper, Tony (2012) 'We must put a price on nature if we are going to save it', *Guardian* 10 August

Kahneman, Daniel (2003) 'Maps of bounded rationality: psychology for behavioral economics', *The American Economic Review,* Volume 93, Issue 5

Kent, Jennifer (2009), Individualized Responsibility and Climate Change: "If Climate Protection Becomes Everybody's Responsibility, Does It End Up Being No-one's?" *Cosmopolitan Civil Society Journal* 1: 132-149

Kirk, Martin (2012) 'A response to Tony Juniper' http://valuesandframes.org/a-response-to-tony-juniper/ accessed 2.3.14

Koelble, T. (2003) Ten Years After: Robert Putnam and Making Democracy Work in the **P**ost-Colony or Why Mainstream Political Science Cannot Understand Either Democracy…*Politikon: South African Journal of Political Studies,* 11/2003, Volume 30, Issue 2.

Kollmuss, A. & Agyeman, J., 2002. Mind the Gap: why do people act environmentally and what are the barriers to pro-environmental behavior? *Environmental Education Research,* 8 (3), 239-260.

Krosnick, JA. And MacInnes B. (2013) 'Does the American Public Support Legislation to Reduce Greenhouse Gas Emissions', *Daedalus*, Winter 2013 vol 142 no 1 pp 26-39; Presentation at US Congress also reported at http://www.theguardian.com/environment/2013/nov/13/climate-change-red-state-opinion-america-study

Kubler- Ross, Elisabeth,(1970) *On Death and Dying,* Tavistock/Routledge p 35

Lash, D. (2011) *Carbon Reduction in the South West*, Internal Paper, Centre for Energy and the Environment, University of Exeter.

Laughton, Rebecca (2003) *An Assessment of Local Agenda 21Initiatives in the North Eastern Districts of England*, unpublished paper.

Laver, Michael (1997) *Private Desires, Political Action: An Invitation to the Politics of Rational Choice,* Sage.

Leggett, J. (1999) *The Carbon War,* London: Penguin Books

Leggett, J. (2014) *The Energy of Nations: Risk Blindness and the Road to Renaissance*, London and New York, Routledge.

Lehtonen J. and Välimäki, J. (2013) 'Discussion: The difficult problem of anxiety' in Weintrobe, S. (ed) *Engaging with Climate Change: Psychoanalytic and Interdisciplinary Perspectives,* Routledge: London and New York.

Leiserowitz, A. (2006) *Climate change risk perceptions and policy preferences: the role of affect, imagery and values*, Decision Research, Oregon

Leiserowitz, A. (2007) 'Communicating the risks of global warming: American risk perceptions, affective images, and interpretive communities' in Moser and Dilling *Creating a Climate For Change* p 44-63

Lieserowitz, A (2012) Gauging public opinion on climate change policy http://www.npr.org/2012/05/04/152026803/gauging-public-opinion-on-climate-change-policy

Lindblom, C.E. (1977) *Politics and Markets*, New York: Basic Books

Lindblom, CE (1979) *Still muddling, not yet through.* Public Administration Review, 39 (1979), pp. 517–526

Lindblom, CE and Woodhouse, EJ (1993), *The Policy-making Process*, Prentice Hall, N.J.

Lipsky, M. (1980) *Street-Level Bureaucracy*. New York: Russel Sage.

Local Government Association (2013) 'Climate Local Progress Update Report' http://www.local.gov.uk/documents/10180/5716319/Climate+Local+progress+update+report+final/31c0027a-61d9-4b79-8e3b-2ca61325e4a4 accessed 21.4.14

Local Government Association (2014) 'Climate Local' http://www.local.gov.uk/climate-local accessed 21.4.14

Lockwood, M. (2009) The political sustainability of climate policy: The case of the UK Climate Change Act *Global Environmental Change*, 10/2013, Volume 23, Issue 5

Lohmann, Larry (2006) *Carbon Trading: A Critical Conversation on Climate Change, Privatisation and Power*, Dag Hammarskjold Foundation.

Lorenzoni , I., Sophie Nicholson–Cole, Lorraine Whitmarsh, (2007) 'Barriers perceived to engaging with climate change among the UK public and their policy implications', *Global Environmental Change* 17 (2007) 445-459

Lorenzoni, I., Riordan, T. and Pidgeon, N. (2008) 'Hot Air and Cold Feet: The UK Response to Climate Change', in H. Compston and I. Bailey (eds) *Turning Down the Heat: The Politics of Climate Policy in Affluent Democracies* Palgrave Macmillan Ltd. 104-124.

Lowndes, V.(2002) 'Institutionalism', Chapter 4 in David Marsh & Gerry Stoker, *Theory and Methods in Political Science,* Second Edition 2002 Palgrave Macmillan Hampshire, New York.

Lowndes, V. (2010) 'The Institutional Approach', in G. Marsh and D. Stoker Theory and Methods in Political Science, Palgrave Macmillan, Basingstoke UK.

Lowndes, V. and Pratchett, L. (2012) 'Local Governance under the Coalition government: Austerity, Localism and the Big Society' Local Government Studies 38:1 21-40

Lukes, Steven, (1974) *Power: A Radical View*. London: Macmillan

Lunn, Pam (2011) *Costing not less than everything: sustainability and spirituality in challenging times* (Swarthmore Lecture 2011), Quaker Books.

Lynas,Mark (2008) *Six Degrees: Our future on a hotter planet*. Fourth Estate, London.

Macy, Joanna (1983) *Despair and Empowerment in the Nuclear Age.* New Society Publishers

Macy, J.R. and Young Brown M. (1998) *Coming Back to Life: Practices to Reconnect Our Lives*, Our World, New Society Publishers

March, J.G. and Olsen, J.P. (1983) 'Organizing Political Life: What Administrative Reorganization Tells Us About Government', *American Political Science Review*, 77 (2): 281-96.
Marglin S. (2008) *The Dismal Science: How thinking like an economist undermines community*, Cambridge, MA, Harvard University Press.

Marshall, George, (2006). Disconnections in UK government long term planning, http://climatedenial.org/2006/06/ viewed 1.4.15

Marshall, George(2009) 'The ingenious ways we avoid believing in climate change', presentation to The Psychology of Climate Change, Conference at University of the West of England, available in video form at http://climatedenial.org/

Marshall, George (2014), 'George Marshall on why extreme weather doesn't necessarily change minds', Interview with Transition Network (probably Rob Hopkins though it doesn't say so), online, http://www.transitionnetwork.org/blogs/rob-hopkins/2014-03/george-marshall-communicating-climate-change-following-extreme-weather-eve viewed 13.4.14

Marshall, George (2014b) *Don't even think about it: why our brains are wired to ignore climate change*, New York, NY : Bloomsbury.

Marwell, G. and Ames, R. (1981) 'Economists Free Ride: Does Anyone Else?', *Journal of Public Economics*, 15(3) 295-310

Marx, F.M. (1957) *The Administrative State.* Chicago: University of Chicago Press.

Mayne, R. Darby, S. and Hamilton J. (2012) *Individual and Social Influences on Energy Use*, EVALOC paper, University of Oxford.
http://media.wix.com/ugd/caf2de_9ca788a582346d11201af07ba0443ac3.pdf viewed 10.2.14

McCright A. and Dunlap R.E. (2003) 'Defeating Kyoto: The Conservative Movement's Impact on U.S. Climate Change Policy', *Social Problems*, Vol. 50, No. 3, Pages 348–373

McIntosh, A. (2008) *Hell and High Water: Climate Change, Hope and the Human Condition*, Edinburgh: Birlinn.

McKibben, Bill (2009) 'Pachauri's call for 350 ppm is breakthrough moment for climate movement', Guardian 26 August, http://www.theguardian.com/environment/2009/aug/26/pachauri-350ppm-breakthrough-climate viewed 4.6.14

Mill, J.S. (1843; 1961) *A System of Logic, Ratiocinative and Inductive.* London: Longman.

Mills, C.W. (1956) *The Power Elite,* Oxford University Press.

Milmo, C. (2007) 'Too late to avoid global warming' article in *The Independent* 19 September, words attributed to 'The body[IPCC]' presumably originating in the press conference, quoted at http://www.countercurrents.org/milmo190907.htm

Mindell, A. and A. (2014) 'Deep Democracy, Terms and Concepts', http://www.aamindell.net/category/ww/deep-democracy-terms/ viewed 9.8.14

Mitchell, C. (2009) '**The drivers for, and constraints of, delivering a sustainable energy policy in the UK' Paper presented to the Great Western Research Sustainability Seminar, University of Exeter, 9th March.** http://www.greatwesternresearch.ac.uk/sustainability.php

Monbiot, G. (2008), speech at Climate March, London

Monbiot, G. (2012) 'Plutocracy Pure and Simple', The Guardian February 20th
http://www.monbiot.com/2012/02/20/plutocracy-pure-and-simple/ viewed 29.4.14

Monbiot G. (2013) 'Parliament of Fools', The Guardian, 17th September
http://www.monbiot.com/2013/09/16/parliament-of-fools/ viewed 29.4.14

Monroe, K.R. (2008) 'Cracking the code of genocide: The Moral Psychology of Rescuers, Bystanders and Nazis during the Holocaust' *Political Psychology*, vol 29 no 5 2008

Morstein Marx F. (1957): *The Administrative State*. Chicago: University of Chicago Press.

Moser, Susanne C and Dilling, Lisa (Eds)(2007) *Creating a Climate For Change*, Cambridge University Press, p xiii.

National Archives, The Climate Change Act, http://www.legislation.gov.uk/ukpga/2008/27/contents viewed 10.8.14

National Park Service (2014) http://www.nps.gov/jomu/historyculture/index.htm viewed 5.6.14

Ney, S. (2009) *Resolving Messy Policy Problems: Handling conflict in environmental, transport, health and ageing policy,* Routledge, UK.

Norgaard, K.M. (2006) 'People Want to Protect Themselves a Little Bit': Emotions, Denial, and Social Movement Nonparticipation, *Sociological Enquiry,* vol. 76, No 3, August 2006, 372-396

Norgaard, K.M. (2010) *Cognitive and Behavioural Challenges in Responding to Climate Change*, World Bank Policy Research Working Paper 4940.

Norgaard, K.M (2011) *Living in denial: climate change, emotions, and everyday life*, Cambridge and London , MIT.

North PJ (2010) *Eco-Localisation as a progressive response to peak oil and climate change ? a sympathetic critique*. Geoforum vol 41 issue 4 pp 585-594

North, P and Barker, T. (2011) *Developing the Low Carbon Economy on Liverpool: future proofing the city for future climate and fuel price uncertainty.* Liverpool, Low Carbon Liverpool.

North, Peter (2012) Towards a Progressive Urban Politics of Climate Change and Peak Oil, Seminar Exeter University Geography Department.

Offcom (2008) Broadcast Bulletin Issue number 114 - 21|07|08 http://stakeholders.ofcom.org.uk/enforcement/broadcast-bulletins/obb114/ viewed 6.5.15

Olivier, J.G.J., *et al.* (21 September 2011), *Long-term trend in global CO2emissions; 2011 report*, The Hague, Netherlands: PBL Netherlands Environmental Assessment Agency; Institute for Environment and Sustainability (IES) of the European Commission's Joint Research Centre (JRC),ISBN 978-90-78645-68-9 PBL publication number 500253004. JRC Technical Note number JRC65918.

Osbaldiston, R. & Sheldon, K.M., 2003. Promoting internalized motivation for environmentally responsible behavior: A prospective study of environmental goals. *Journal of Environmental Psychology,* 23 (4), 349-357.

Osborne, G.(2011) Speech to Conservative party Conference, available http://www.businesszone.co.uk/topic/business-trends/george-osbornes-2011-conservative-party-conference-speech-full/37317 viewed 20.4.14

Östrom, Elinor et al.(1999), 'Revisiting the Commons: Local Lessons, Global Challenges', *Science*, **284**, 278 http://terra-geog.lemig2.umontreal.ca/donnees/geo2312/ostrometal_1999.pdf

Oxford Martin Commission (2013) *Now for the Long Term*: *Report of the Oxford Martin Commission for Future Generations*, Oxford: Oxford University http://www.oxfordmartin.ox.ac.uk/downloads/commission/Oxford_Martin_Now_for_the_Long_Term.pdf

Øyen, E., (1990) *Comparative Methodology. Theory and Practice in International Social Research* London: Sage

Parity Projects (2014) 'Counting the Cost of the Changes to ECO' Parity News, http://www.parityprojects.com/counting-cost-changes-eco/ accessed 31.1.2014

Parry, M. (2008) 'Key Impacts of Climate Change: Those inevitable and those avoidable' University of Exeter, Conference on Climate Change, September 2008.

Parsons, Craig, (2010) 'Constructivism and Interpretive Theory', in D. Marsh and G. Stoker (eds) Theory and Methods in Political Science, 3rd Edition, Palgrave Macmillan.

PBL Netherlands Environmental Assessment Agency (2013), Trends in Global CO2 emissions, 2013 Report, PBL. http://www.pbl.nl/sites/default/files/cms/publicaties/pbl-2013-trends-in-global-co2-emissions-2013-report-1148.pdf retrieved 31.12.13

Peter, L., (2014) Climate Change: EU eyes new green energy targets, *BBC news* 23 October http://www.bbc.co.uk/news/world-europe-29736484 viewed 4.5.15

Peters, M., Shane Fudge and Joanne Wade, 2012, 'Local authority perspectives on energy governance and deliverance in the UK: a thematic assessment of restricting and enabling factors', University of Surrey, Centre for Environmental Strategy Working Paper, ISSN 1464-808 http://www.surrey.ac.uk/ces/activity/publications/index.htm

Pew Research Centre (2008) A Deeper Partisan Divide over Global Warming http://www.people-press.org/2008/05/08/a-deeper-partisan-divide-over-global-warming/

Pew Research Centre (2013) data quoted in http://www.noiseofthecrowd.com/2013/06/

Pidgeon, Nick (2011) Climate Risk and Public Perceptions in International Negotiations, presentation to DECC, Cardiff University/Tyndall Centre October 13th.

Pielke, R.A., 2009. The British Climate Change Act: A critical evaluation and proposed alternative approach. *Environmental Research Letters*, 4 (2), 1-7.

Plymouth Climate Change Commission (2012) Climate *Wealth and the City: Plymouth's Local Carbon Framework* http://www.plymouth.gov.uk/lcfprospectus.pdf viewed 5.2.14

Plymouth City Council (2013) www.plymouth.gov.uk/homepage/environmentandplanning/sustainableplymouth/greeningyourbusiness.htm viewed 1.2.14

Polsby N.(1980), *Community Power and Politic al Theory*, 2nd Edition, Yale.

Presthus R. (1964) *Men at the Top* OUP, New York .

PriceWaterhouseCoopers, November 2012. Too late for two degrees? Low carbon economy index 2012. http://www.pwc.co.uk/sustainability-climate-change/publications/low-carbon-economy-index-overview.jhtml

Przeworski A. and Teune H. Eds (1970), *The Logic of Comparative Social Enquiry*, Wiley, New York and London

Putnam, R.D., R. Leonardi and R. Nanetti (1993) *Making Democracy Work: civic traditions in modern Italy*, Princeton University Press.

Putnam, R.D. (1995) Bowling Alone: America's Declining Social Capital*, Journal of Democracy*, 6 (1), 65-78

Putzel (1997) Accounting for the "dark side" of social capital, *Journal of international development* Volume 9 Issue 7 pp 939-949

Ragin, C.C., (1989). *The Comparative Method. Moving Beyond Qualitative and Quantitative Strategies* Berkeley / Los Angeles / London: University of California Press

Randall, Ro (2005) A New Climate for Psychotherapy? In *Psychotherapy and Politics International,* Issue **3**:3, September 2005, John Wiley and Sons Ltd

Randall, Ro (2009) Loss and Climate Change: the cost of parallel narratives, *Ecopsychology,* November 2009

Randall, Ro (2013a), 'Great Expectations: the psychodynamics of ecological debt', ch 5 in S. Weintrobe (ed) *Engaging with Climate Change: Psychoanalytic and Interdisciplinary Perspectives*. London and New York, Routledge.

Randall, Ro (2013b), contribution to discussion on 'Why the World Won't Listen: Problems with a 'Values Approach' to Climate Change', http://www.climatepsychologyalliance.org/why-the-world-wont-listen-problems-with-a-values-approach-to-climate-change/

Rapley, Chris (2013), 'Climate Dismissal: science and politics of climate change', SLRG seminar, University of Surrey, October 7

Rastani, A. (2011) Trader on the BBC says Eurozone Market will Crash http://www.youtube.com/watch?v=aC19fEqR5bA

Rayner, T., Russel, D. and Lorenzoni, I. (2008) 'It's Demand Stupid: The Failure and Future of Integrating Climate Change Concerns into UK Transport Policy', *British Politics* **3**, 373-389.

Rayner, S., 2010. How to eat an elephant: a bottom-up approach to climate policy. *Climate Policy* **10** (6), 615-621.

Reason, P (2009) and Associates, *Insider Voices: Human Dimensions of Low Carbon Technology,* Lowcarbonworks, University of Bath.

Reeves, Donald (2014) Peace-building and Inter-Religious Dialogue, http://www.soulofeurope.org/peacebuilding-and-inter-religious-dialogue/ accessed 9.8.14

Regan, G. (1993) *The Guinness Book of Naval Blunders*, Guinness, p 19-24

Ridley, Jeff (2011), Presentation to University of Exeter Green Week, September 2011.

Rootes, Christopher, Anthony Zito & John Barry (2012): Climate change, national politics and grassroots action: an introduction, Environmental Politics, **21**:5, 677-690

Rosenfeld, H. (1971) A clinical approach to the psychoanalytic theory of the life and death instincts: An investigation into the aggressive aspects of narcissism. *International Journal of Psychoanalysis*, **52**: 169-178

Rowson, J. (2013) A New Agenda on Climate Change: Facing up to Stealth Denial and Winding Down on Fossil Fuels, London: Royal Society of the Arts, Action and Research Centre, available at http://www.thersa.org/action-research-centre/learning,-cognition-and-creativity/social-brain/reports/a-new-agenda-on-climate-change accessed 16.1.14.

RSA Animate (2013) 21st Century Enlightenment, RSA http://www.thersa.org/about-us
Rust, M-J. (2008) Climate on the couch: unconscious processes in relation to our environmental crisis. Psychotherapy and Politics International **6** (3), 157–170.

Rust, M-J. and Totton, N. (2012) Vital Signs: Psychological Responses to Ecological Crises. London:Karnac

Sandvik, Hanno (2008) Public concern over global warming correlates negatively with national wealth *Climatic Change* 90(3): 333-341

Science Daily (2010) *American Opinion on climate change warms up* 8 June http://www.sciencedaily.com/releases/2010/06/100608151052.htm

Scott-Cato, Molly, (2012) 'Defensive Localism or Creative Localization' unpublished paper

Scripps Institution of Oceanography, University College, San Diego, http://keelingcurve.ucsd.edu/ viewed 30.5.14

Selznick, P. (1957; reissued 1984) *Leadership in Administration*, New York: Harper & Row; reissued Berkeley: University of California Press.

Simon, H.A. (1957) *Administrative Behavior. A Study of Decision-Making Processes in Administrative Organizations*. New York, Free Press. Pp. 259.

Simon HA. 1999. The potlatch between political science and economics. In *Competition and Cooperation: Conversations with Nobelists about Economics and Political Science*, ed. J Alt, M Levi, E Ostrom. Cambridge, UK: Cambridge Univ.

Social Brain Centre (2013) http://www.thersa.org/action-research-centre/learning,-cognition-and-creativity/social-brain

Spence, A., Venables, D., Pidgeon, N., Poortinga, W. and Demski, C. (2010). *Public Perceptions of Climate Change and Energy Futures in Britain: Summary Findings of a Survey Conducted in January-March 2010*. Technical Report (Understanding Risk Working Paper 10-01). Cardiff: School of Psychology.

Stein, M.(2011) A culture of mania: a psychoanalytic view of the incubation of the 2008 credit crisis, Sage, available at http://org.sagepub.com/content/18/2/173.full.pdf viewed 28.1.14

Stern, N. (2006) *Stern Review: The Economics of Climate Change*, HM Treasury , London , UK http://webarchive.nationalarchives.gov.uk/+/http://www.hm-treasury.gov.uk/stern_review_report.htm

Stern, P.C. & Dietz, T., 1994. The Value Basis of Environmental Concern. *Journal of Social Issues,* 50 (3), 65-84.

Stern, P.C., 2000. New Environmental Theories: Toward a Coherent Theory of Environmentally Significant Behavior. *Journal of Social Issues,* 56 (3), 407-424

Stewart, J. (2003) Modernising British Local Government, Palgrave, Basingstoke.

Stoker, G. (2004) Transforming Local Governance, Palgrave, Basingstoke.

Stoll-Kleemann S., O'Riordan,T., and Jaeger, Carlo C., (2001)The psychology of denial concerning climate mitigation measures: evidence from Swiss focus groups, *Global Environmental Change*, **11** 107-117

Sustainable Development in Government 2007 (2008) Sustainable Development Commission

Thaler, R.H. and Sustein, Cass R.(2008) *Nudge: Improving Decisions about Health, Wealth and Happiness,* Yale University Press, New Haven & London.

Thompson M. and Rayner S., (1998a) 'Risk and Governance Part 1: The Discourse of Climate Change' in *Government and Opposition* **33**(2) p 139-168

Thompson Michael, Steve Rayner and Steven Ney, (1998b) "Risk and Governance Part II: Policy in a Complex and Plurally Perceived World", in *Government and Opposition* **33**(3) p330 – 354

Thompson, Michael, Gunnar Grendstad and Per Solle, (1999), *Cultural Theory and Political Science*, Routledge

TNS BMRB (2013), quoted in Daniel Boffey 'How Britain became a nation of cynics' at http://www.theguardian.com/society/2013/nov/17/1963-opinion-poll-westminster-public

Toke, D. (2010), Politics y Heuristics: Policy Networks with a Focus on Actor Resources, as Illustrated by the case of Renewable Energy Policy under New Labour, *Public Administration*, vol 88 (3) pp 764-781

Totton, Nick,(2011) 'Wild Therapy' *Therapy Today*, **22**(2) 10-19

True J.L., Bryan D Jones, Frank R Baumgartner (1999) 'Punctuated-equilibrium theory: Explaining stability and change in American decision-making, *Theories of the policy process*, pp 97-115

Turner J.A. (1999) 'A Realizable Renewable Energy Future', *Science*, vol 285 30 July 1999 pp 689-689

UK Green Building Council (2014) Green Deal Finance: Examining the Green Deal interest rate as a barrier to take-up, file:///C:/Users/hp/Downloads/140120%20Green%20Deal%20Finance%20Task%20Group%20-%20Report%20FINAL.pdf viewed 30.6.14

UNFCCC (2014) Greenhouse Gas Inventory Data http://unfccc.int/ghg_data/items/3800.php viewed 6.5.14

US Department of Commerce, National Oceanic and Atmospheric Administration (NOAA), Available from http://www.esrl.noaa.gov/gmd/obop/mlo/programs/coop/scripps/co2/co2.html Viewed 4.5.14

Vidal, J. (2013) UK signals support for EU import of Canadian tarsands oil https://www.gov.uk/government/news/46million-boost-for-132-local-energy-schemes Wed 15 May

Webster, B. (2015) Britain gives up trying to lead world on CO2, *The Times* 24 July 2015 reported in http://truenorthreports.com/britain-gives-up-trying-to-lead-world-on-co2-emissions 'Britain will go no faster than other countries in cutting greenhouse gas emissions, the government has signalled.' Retrieved 29.2.2016

Weintrobe,S. (2004) Links between grievance, complaint and different forms of entitlement. *International Journal of Psychoanalysis*, **85**: 83-96

Weintrobe, S. (2010) On links between runaway consumer green and climate change denial: A psychoanalytic perspective. *Bulletin Annual of the British Psychoanalytical Society*, **1**: 63-75. London: Institute of Psychoanalysis.

Weintrobe, S. (2013) (Ed) *Engaging with Climate Change: Psychoanalytic and Interdisciplinary Perspectives,* Routledge: London and New York. Ch 3: The difficult problem of anxiety in thinking about climate change.

White, Andrew (1993). *A History of Whitby*. Chichester: Phillimore & co. ISBN 0-85033-842-5 cited in 'Whitby' wikipedia https://en.wikipedia.org/wiki/Whitby#Town viewed 31.12.13

White, Sandra (2010) 'Beyond Sacrifice – Reaching towards the Ecological Self' paper given at conference '*Seeing Futures – Integrating Scientific Views on Changing Climates*', at University of the West of England, Centre for Psychosocial Studies **13** November 2010;

Whitmarsh L., Seyfang G. and O'Neill S. (2011) Public engagement with carbon and climate change: To what extent is the public 'carbon capable'? Global Environmental Change **21** 56-65 Available online at https://ueaeprints.uea.ac.uk/20450/1/JGEC797.pdf viewed 5.5.14

Wilbur Ken, (2000). *Integral Psychology*. Boston: Shambhala, quoted in David Ballard, 'Using Learning Processes to Promote Change for Sustainable Development' *Action Research (Special Issue on Change for Sustainable Development),* Volume 3 Issue 2, June 2005.

Wilson, David and Chris Game (2011). *Local Government in the United Kingdom*, Basingstoke: Palgrave Macmillan

Workman, Samuel,Bryan D. Jones, Ashley E Jochim (2009), 'Information Processing and PolicyDynamics, *Policy Studies Journal* 02/2009 **37** Issue 1.

World Public Opinion (2009) Publics want more government action on climate change http://www.worldpublicopinion.org/pipa/articles/btenvironmentra/631.php

Yougov (2012) http://research.yougov.co.uk/news/2013/01/30/public-opinion-climate-change/#sthash.Mmr3qiij.dpuf

Zerubavel, Eviatar (2006) *The Elephant in the Room: Silence and Denial in Everyday Life.* New York: Oxford University Press.