How do politicians understand and respond to climate change?

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This portfolio is submitted for the degree of Doctor of Philosophy

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Declaration

The supporting paper and portfolio of journal papers have not been submitted in support of an application for another degree at this or any other university. They are the result of my own work and include nothing that is the outcome of work done in collaboration except where specifically indicated.

The supporting paper has not been published elsewhere. The journal papers have been published, or submitted for publication, as described in Section 2.4 below.

The portfolio consists of a supporting paper of 19000 words, four papers of approximately 8000 words, and one paper of approximately 4000 words.

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Abstract

The scientific consensus on climate change is strong, and evidence points to the need to take action to drastically reduce emissions of greenhouses gases. At the Paris summit in 2015, 195 world leaders set a clear goal to limit climate change. Yet the means to achieve this goal remain firmly at the level of the nation-state, with each country assuming responsibility for its own national plan. Thus national administrations, run by elected politicians, have a crucial role to play. It is the role of politicians to put in place the strategies, policies and incentives necessary to facilitate emissions reductions. How does this commitment at the level of the nation-state fit with a politician's mandate as a democratically elected representative? What role do national politicians think they can and should play in responding to climate change?

The study explores these questions empirically, seeking to understand how Members of the UK Parliament (MPs) understand climate change and its implications for political and social life, and their deliberations about whether or how to act on the issue. The work is informed by an interdisciplinary literature including science and technology studies, sociology, political science and environmental governance. It uses a mixed method approach, comprising corpus analysis of political speech, a focus group with climate advocates, and two sets of qualitative interviews with MPs.

The study finds that, whilst politicians understand, to varying degrees, the need for action on climate change, it is not straightforward for them to make a case for action. There are three main reasons for this. First, the literal and metaphorical scale of climate change in comparison to the procedures and preoccupations of daily politics. Second, politicians consider the climate issue in the context of their professional identity and the cultural norms of their workplace, and report that climate action does not 'fit' with these norms. Third, UK politicians feel very little pressure from their electors to act on climate change, and have to work to build a democratic case for climate action.

The study offers recommendations for both research and practice. In terms of research, there is a need for a more fine-grained, contextual understanding of the interplay between global goals and national political systems. In terms of practice, politicians, working with other stakeholders, need support in order to articulate the scale and significance of the climate challenge, and craft responses which build democratic support for further action.

Acknowledgements

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Guidelines for Alternative Format PhDs

Below are the guidelines issued by Lancaster University Sociology Department, for Alternative Format PhDs.

PhD by Publication (Alternative Format)

To be awarded a PhD by Publication (Alternative Format) a candidate must show that his or her work makes a significant contribution to knowledge in a particular field. The publications (which may be published, in press or submitted for publication in a relevant scholarly journal) and the accompanying statement must also provide evidence of the capacity of the candidate to pursue further research, representing a coherent contribution to research in a given field and demonstrating a depth of scholarship and originality comparable with that normally required in a PhD thesis. The material submitted shall be sufficiently extensive as to provide convincing evidence that the research constitutes a substantial contribution to knowledge or scholarship. Some pieces may be co-authored, but the contribution of the candidate must be clearly documented.

Notes:
(a) Candidates are encouraged to seek advice within the Sociology Department that the Alternative Format is more appropriate for the research project and that s/he can take full advantage of the Alternative Format;
(b) these guidelines shall form the basis of agreement between the student, supervisor and head of department (or her/his nominee) on the Alternative Format to be employed in the submission;
(c) supervision shall proceed in the typical manner.

The thesis shall be comprised of two key elements:
(1) original, researched materials (normally at least 4 pieces of writing); and
(2) a supporting paper of 10- 20 000 words.

Notes:
a) The original researched materials submitted may:
(i) be already published; and/or
(ii) be accepted for publication; and/or
(iii) be submitted for publication in externally refereed contexts such as journals, conference proceedings and on-line sites, and
(iv) include materials which are solely and/or partly authored by the candidate.

The pieces may include journal articles and book chapters, but may not include course readers, or unpublished seminar/conference papers.

(b)The candidate must also submit a supporting paper of 10-20 000 words that summarises each submitted piece, outlines their interrelationship, gives a critical review of the current state of knowledge and research in the applicant's field and indicates how his or her work has contributed to the field. For published pieces, should also comment on the standing of any journals and the reception of the publications as indicated by citations and reviews.

Examination
The PhD examination will be by viva voce, as in the typical manner, with the standard set of outcomes possible.

Notes:
Examiners shall satisfy themselves that the thesis as a whole meets the criteria for award of the degree, as outlined above. They may wish to pay particular attention to satisfying themselves that of any multi-authored materials included, a significant proportion is the work principally of the candidate; and are reminded of the freedom to specify additional tests as part of the examination.

The structure of this portfolio

The portfolio begins with the first half of the Supporting Paper, Part A. This reports on the research process. It includes a review of the existing state of knowledge, the methodological stance, and a summary of published papers. It describes the collaboration with Green Alliance, as partners in this project, and other policy and practitioner interactions. It also suggests avenues for future research.

The five journal papers themselves then follow, as Part B.

Part C is the second half of the Supporting Paper, offering some personal reflections on the PhD project. I reflect on the research process itself, describing challenges including my own positioning in the research, and interdisciplinary working. Finally, I offer some reflections, more speculative and wide-ranging than is possible in published papers, on the future of politics and climate change.

Part D contains a consolidated bibliography, and annexes, including the participant information sheet, consent form and interview schedules; and three blogs written for Green Alliance's website, *Inside Track*, reporting on the research.

Part A

Supporting Paper: The Research Process

1. Introduction: The origins of this project

A few months before the UK's 2010 general election, I ran a series of workshops for prospective Members of Parliament (MPs), run by Green Alliance, an environmental think tank. The workshops were designed to introduce MPs to the science, policy and politics of climate change. Our participants had discussions with eminent scientists, to talk about climate science and its implications. They talked to business representatives, civil society groups and government advisers, to develop ideas about how the UK can reduce its emissions of greenhouse gases. They debated, with senior politicians from their own parties, the implications of climate change for the political strategies and outlooks of each political tradition.

The workshops were undoubtedly a success. Over 50 politicians attended, we received very positive feedback, we built a relationship with the MPs after the election, and we repeated the workshops before the 2015 election. But the more time I spent on the work, the more I was nagged by a fundamental question. We offered the politicians the chance to learn, to think and to debate climate change. What happened when they walked out the door? How did they take this learning into their work as a politician? To put it another way – suppose each politician had left our workshop convinced of the case for action on climate change, how would that change the way they approached their job?

It has long been understood that people do not respond to scientific evidence in a linear way; politicians, or indeed anyone, should not be seen as empty vessels waiting to be filled with knowledge, the so-called 'deficit model' of science communication (Wilsdon and Willis, 2004; Wynne, 2010). Lack of action on climate change, for example, cannot simply be explained by lack of knowledge about climate science. Conversely, telling people about the science of climate change will not automatically lead to a change in outlook or behaviour. I knew that I should not expect politicians to change their views or actions on climate change just because they knew more about it, following the workshops. So how could I find out more about how they might approach the issue, and, therefore, how they could be better understood and supported?

I tried to answer this question. I turned to the academic journals, to see what research existed. The literature on climate politics and governance was extensive – but there was nothing about politicians, as a significant group of individuals within these systems and institutions. There was, too, a rich literature about public attitudes and motivations on climate change (eg Horton, 2003; Laidley, 2013; Norgaard, 2006) and the outlook of business leaders (eg (Meyerson and Scully, 1995; Wright et al., 2012). There was nothing like this for politicians. I decided I would have to find out myself – and that was the beginning of this study.

2. Report and summary of the project

2.1 The contribution of this project

The central research question for this project is:

How do MPs understand climate change and its implications for political and social life, and how do they decide whether or how to act on the issue?

As the review in section 2.2 below shows, whilst the politics and governance of climate change has been much discussed across the social sciences, there has been very little research directed at the question of how politicians understand and act upon the issue. The gap in the literature is aptly summarised by a review conducted by Lauren Rickards and colleagues into the role of senior government and business decision makers in climate change mitigation:

> Despite the important role of SDMs [senior decision-makers], many analyses of the climate change problem gloss over them. On the one hand, analyses focus on high-level political economy and sectoral responses, playing into images of impersonal omnipotent systems, outdated faith in nation states and global agreements, and abstract references to 'power relations'. On the other hand, analyses focus on homogenized private individuals ('consumers'), playing into uncritical universalized statements about human responsibility, the neoliberal privatization of risk, and climate policy techniques reductively focused on civic society. While concentrating instead on SDMs within influential political economic structures is no panacea, it does begin to address these blind spots and expand change options beyond the limited reach of international negotiations or public behaviour change. (Rickards et al 2014:3)

This is the contribution of this project. It focuses on an under-researched area: the motivations and outlooks of politicians, as an important group within climate change research. It connects and draws together the disparate literatures described in section 3 below, and adds empirical data.

The project was developed as a CASE Studentship, a collaborative project between Lancaster University and the think-tank Green Alliance, funded by the UK Economic and Social Research Council. The role of Green Alliance as the CASE partner is discussed in section 2.5 below.

Thus the project contributes to knowledge in the following ways:

- Providing the first detailed, mixed-method study of how politicians understand and respond to climate change;

- In doing so, contributing to the limited number of studies which use qualitative methods to investigate politicians' identities and working lives;

- Using novel methodologies, particularly the use of corpus analysis to supplement qualitative research methods, and the development of composite narratives to present interview data.

2.2 The existing state of knowledge

This project draws on an interdisciplinary literature from across the social sciences, drawing on sociology, science and technology studies, political science, political theory and geography. Research from all of these disciplines provides useful insights into the central research question, though none addresses the question directly.

The existing state of knowledge is summarised below and explored in more detail in the following section.

- There has been a great deal of interdisciplinary research into mechanisms for **environmental governance**, and more specifically, climate governance. Such work tends to focus on governance mechanisms and processes, rather than examining political questions, or the motivations or outlooks of the people involved.
- There is a large and growing literature examining **climate politics**, in the fields of political science and theory. A specific question addressed is whether and how climate issues can be incorporated into current political arrangements, or whether new approaches are needed. Like the work on environmental governance, this does not directly address the 'people question'.
- There are significant and varied literatures in sociology, social psychology and business and management studies, investigating **understandings of climate change,** both among publics and within specific groups**.** This includes a vast literature examining the relationship between identity, attitudes, values and behaviour in relation to environmental issues; research into specific social and professional groupings, including business leaders and environmental activists; and work which looks at differences between social class and gender. However, with the exception of one Australian study, there is no research into politicians as a professional group, and none on UK Members of Parliament.
- The question of **how people engage with scientific evidence** has long been examined within science and technology studies (STS), with direct relevance to this project. STS approaches can help to explain how politicians understand and respond to scientific evidence.
- There is a tradition of research into **the outlook and working life of politicians**, across the social sciences. This focuses on the working practices, behaviours and strategies of politicians, but does not specifically address the issue of climate change. Of particular interest is the sociological research into politicians' identity and social understandings, and specifically, research into gender and politics.

Below, each of these areas of literature is summarised in turn.

Environmental governance
There is a very large literature on environmental governance, at international, national and local levels, from disciplines including economics, political science, geography and environmental science, as well as much interdisciplinary work (examples which include discussions of climate change include Dalby, 2013; Dryzek, 2016; Eckersley, 2004; Johnson et al., 2014;

Latour, 2014; Lövbrand et al., 2009; Underdal, 2017). The literature of most relevance to this study, listed below, includes a) recent work developing the concepts of 'earth system governance' and 'planetary boundaries'; b) the field of transition management; and c) analyses of actually-existing climate strategies and plans at national level.

a) 'Earth System governance' is defined by one of its architects, Frank Biermann, as "the societal steering of human activities with regard to the long-term stability of geobiophysical systems" (2014:59). Such research has both an analytical and normative dimension, analysing current and historical attempts to govern earth systems, and, in normative terms, investigating ways in which governance processes could be reformed in order to better manage earth systems. Much work in this area has been carried out through the Earth System governance Project, launched in 2009. A related concept is the call for 'planetary stewardship' which advocates a system of governance "built around scientifically developed boundaries for critical Earth System processes" (Rockström et.al., 2009:757). This work is useful in that it analyses the link between scientific evidence of climate change (in the context of earth systems) and the question of governance. However, it largely focuses on multilateral institutions, such as the UN system, with less focus on national administrations. Whilst, in its normative dimension, it advocates governance regimes to move to effective earth system governance, it does not address the question of how such a process could be managed within political systems at national or local level.

b) The field of 'socio-technical transitions' (see Geels et al., 2017 for a summary) aims to analyse the way in which a society and economy can be governed in order to bring about desired changes, such as a deep reduction in carbon emissions. It provides a useful account of how the transition to a low-carbon economy and society could be brought about. Emerging from the field of evolutionary economics, this approach starts from an analysis of past transitions, such as the shift from carriages to automobiles, and uses this analysis to suggest how such transitions could be brought about or enabled in order to meet social or environmental goals (Geels, 2005; Markard et al., 2012). This approach provides a useful account of the complexities and timescales of environmental governance. However, it has been criticised for not paying enough attention to power and politics, particularly the tendency of incumbent industries and their supporters to resist change (Geels, 2014; Phelan et al., 2012; Unruh, 2000). Neither does it provide an account of the motivations of individuals involved in promoting or resisting transitions, concentrating instead on economic structures and processes.

c) Also of use to this study are empirical analyses of environmental policy across different legislative systems, which show the influence of different governance arrangements (eg Lachapelle and Paterson, 2013; Schaffer and Bernauer, 2014). A recent review of 'post-carbon pathways' (Wiseman et al., 2013) examine eighteen strategies for responding to climate change, nine government-led and nine from non-government sources. The study notes that the government-led plans are markedly less ambitious and more incremental in tone than the non-government plans. It also stresses the lack of attention to

the political effort required to bring such transitions about, noting "a lack of detailed game plans within the strategies analysed for mobilising the required level of political leadership and public support for rapid transitions. This remains the most significant gap in post-carbon economy transition strategies." (2013:91)

Climate politics

As described above, much analysis of environmental governance is silent about the politics surrounding it, and specifically, the way in which any governance changes might be brought about. Such questions are, however, addressed within the disciplines of political theory and political science. The areas of most relevance to the study are as follows: a) political theory investigating the relationship between humans and the natural world; b) political theory and commentary addressing the question of whether or how climate change can be addressed through current political structures, or whether more radical change is needed; c) political science analysing the workings of political systems, including how issues are framed and discussed (or ignored); and d) theoretical accounts of political representation, which, whilst not specifically addressing questions of climate change, proved to be a significant theme emerging from the data generated by this study.

a) The question of the place of nature and non-human species in politics has been discussed for many centuries (for an overview see Dobson, 2000). Recently, this debate has taken a new turn, with commentators from across the natural and social sciences arguing that human-induced changes to earth systems are now so profound that we have entered a new geological era, the Anthropocene (Bai et al., 2016; Biermann, 2014; Clark and Gunaratnam, 2017; Lövbrand et al., 2015). The relative planetary stability of the Holocene era, it is argued, has given way to a new phase of greater instability in earth systems, including the climate system, which in turn requires different political understandings (Castree et al., 2014; Clark, 2014). These insights are very significant for the study described here, because modern democratic politics has developed in a time of relative climatic stability. Anthropogenic changes threaten this stability, and a full political response to climate change would require discussion of the extent to which a stable climate is a prerequisite for our political and social systems.

b) A related debate is the question of whether climate change can be addressed through existing political and economic systems, or whether more radical changes are needed. Some accounts of climate politics, such as Anthony Giddens' (2009), propose an incremental, reformist agenda; most politicians would, implicitly or explicitly, hold this view, as evidenced by political manifestos, for example. The analysis of Parliament's independent adviser, the Committee on Climate Change, suggests that radical emissions reductions, in line with the 2008 Climate Change Act, are possible under current models of governance (Committee on Climate Change, 2016). However, more radical critics maintain that meaningful action is incompatible with the global economic system, and that far-reaching changes to our economy and society are necessary. For example, Tim Jackson (2011) states that climate change cannot be tackled without addressing the 'growth

imperative' of modern societies; Naomi Klein (2015) similarly argues that the structures of modern capitalism are incompatible with climate action; and Eric Swyngedouw (2010) argues that climate politics has become 'post-political', in that it is based around a false consensus about the need for technocratic solutions rather than radical economic and social action (see also Machin, 2013). Radical ecologist William Ophuls makes a similar point from a different perspective, that modern societies and political systems are made possible by abundant natural resources and a stable environment. The implication is that scarcity and environmental instability would threaten the viability of liberal democracy (Ophuls, 1992).

c) There is a specific literature within political science which discusses the place of climate change on the political agenda. UK studies include Neil Carter's (2014) account of the way in which climate became a significant political issue leading up to the 2008 introduction of the Climate Change Act. Further analyses (Carter and Clements, 2015; Lockwood, 2013) document how consensus behind the Act has unravelled in the intervening years, with Fay Farstad and colleagues (2018) warning that the Brexit process could put the Climate Change Act itself at risk.

A further insight from political science is the literature on 'framing' in politics (Benford and Snow, 2000; Cobb and Coughlin, 1998; Downs, 1972; Hajer and Forester, 1993; Kingdon, 1995). This describes the process by which politicians shape an issue to fit with their ideology, the views and opinions of voters and other actors, a sense of what is achievable, prevailing norms and assumptions, and so on. An example of such framing is the 1997-2010 Labour administration's deliberate use of economic language and policy instruments to achieve environmental goals, which Maarten Hajer (2000) has termed 'ecological modernisation'.

d) The discussion of representation in political theory became an important theoretical insight for this study, once the interview data revealed MPs' understandings of their representative role to be a key factor in their consideration of climate change. The meaning of representation has been debated for many centuries (Dobson and Hamilton, 2016; Mansbridge, 2003). Standard theories of representation are based on territoriality, but such descriptions do not account for issues such as religion, ethnicity or gender identity; or the role of non-elected actors in politics, such as businesses or civil society groups organising around issues rather than places (Urbinati and Warren, 2008). Neither do standard accounts solve the issue of whether or how nature and non-human species get a hearing in the democratic process (Dobson and Hamilton, 2016). As these standard accounts have come under increasing pressure, Michael Saward has proposed a shift in how representation can be understood. He argues that representation should be seen not as a static fact, but as a dynamic exchange between representatives and those being represented, in which a politician (or anyone else seeking a representative role) can make a claim, which in turn is accepted or rejected by others (Saward, 2010). Saward's articulation of representation seemed to match the accounts put forward by politicians in my study, as explored in Paper 3.

Understandings of climate change

Public opinion research reveals conflicting understandings of climate change. Government-commissioned polling in the UK reports that 71% of individuals said they are very or fairly concerned about climate change, with this figure increasing slightly over time (Department for Business, Energy and Industrial Strategy, 2017). However, there is also evidence to suggest that public concern about climate change is low compared to other issues:

> Climate change is invariably not the highest or most important priority for many people…. Other global/societal issues (e.g. world poverty, crime, terrorism, and war), environmental issues (e.g. water pollution), or personal issues (e.g. health, finances, and relationships) have a higher expressed importance for them. (Pidgeon, 2012:s87)

This complex picture has been analysed in more detail by scholars from a range of disciplines investigating how people understand and respond to climate change. In common with the field of science and technology studies (STS) discussed in the next section, many of these studies stress that the way in which people respond to scientific information is socially and culturally constituted (Hulme, 2009). For example, a recent review of the psychology literature listed 29 'barriers to action' on climate change, including optimism bias, and discounting of the future (Gifford, 2011). The sociologist Kari Norgaard uses the term 'socially organised denial' to describe "not in most cases a rejection of information per se, but the failure to integrate this knowledge into everyday life or to transform it into social action" (2011:11). This may be symptomatic of life in a complex society where social practice is predicated on carbon consumption (Shove, 2012; Urry, 2011).

A relatively small number of studies use the approach taken in this project: detailed sociological analysis of the attitudes and motivations of a particular social group. Such studies include Thomas Laidley's (2013) study of class differences in responding to climate change, Dave Horton's (2003) account of the identity work of environmental activists, Christopher Wright and colleagues' (2012) study of sustainability 'experts' within large corporations, and Kari Norgaard's (2006) investigation of climate understandings in a Norwegian village. The only study identified which investigates politicians as a specific group, is research by Kelly Fielding and colleagues (2012) on Australian politicians, though the work employed quantitative survey techniques rather than the more detailed, exploratory methods used in this project. More generally, a 2014 review found no research into the views, values and motivations of practising politicians on these issues (Rickards et al., 2014).

Engaging with scientific evidence

The above discussion of understandings of climate change relates to the broader question of the ways in which scientific evidence is produced, and how people respond to scientific evidence. These issues are addressed within science and technology studies (STS), a field which is too broad and heterogeneous to explore comprehensively in this review. Relevant work includes analysis of the ways in which climate change is constituted and discussed as a scientific phenomenon (eg Beck, 1992; Jasanoff, 2010; Lash

et al., 1996; Wynne, 2010), and the ways in which scientific knowledges and public understandings interact (McNeil, 2013; Wilsdon and Willis, 2004; Wynne, 1996).

STS insights help to explain that when politicians assess climate change, it is not simply a case of taking evidence and 'translating' it into appropriate governance mechanisms. STS dismisses the notion that science can be straightforwardly 'translated' (Wynne, 2010). Instead, the ways in which people and institutions respond to scientific evidence are complex and situated, influenced by social and institutional norms and cultures. As articulated by Sheila Jasanoff, the challenge is to understand the "complex ways in which the construction of stable knowledge interpenetrates with the formation of core elements that stabilize society: identities, institutions, discourses and representations, among others" (2010:236).

Also from the field of STS comes insights, inspired by Bruno Latour's early work (1987, 1983) into how scientists go about their working life. Latour's analysis demonstrates that everyday practices have a strong influence over the definitions of aims or ambitions (Latour, 1987). An influential study for this project is Joan Fujimura's (1987) study of 'do-able problems'. Fujimura uses ethnographic investigation to reveal how scientists in a cancer laboratory constantly work to 'achieve alignment' between the day-to-day tasks they carry out, the wider environment of the laboratory; and the expectations of colleagues, sponsors and other actors. Whilst scientists state their aims in terms of the scientific breakthrough they are trying to achieve, these aims are actually constantly adapted and negotiated in the light of day-to-day pressures and constraints. Fujimura argues that, through this process of 'tinkering', aims and ambitions get crafted into 'do-able problems', manageable within the confines of laboratory life. Applying this analysis to parliament, the day-to-day working life of politicians could be expected to influence their broader aims and ambitions.

The outlook and working life of politicians
Although there has not been previous detailed research on how politicians understand climate change, other studies about how politicians conceive of their roles and duties provide useful background for this study. For example, Richard Fenno's (1977) classic account of 'home style' describes the political strategy of individual US Members of Congress, drawing a distinction between the way that they represent issues in Washington and in their own District. In the UK, political scientist Philip Norton has documented the changing relationship between MPs and their constituents over time (see for example Norton, 1997). Ethnographies of parliament and government (eg Crewe, 2015; Rhodes, 2011) describe the day-to-day working lives of Members of Parliament, and government ministers. These texts, mainly written from the perspective of political science, offer useful insights into politicians' lives and outlooks.

An area of focus is gender in the House of Commons, with studies from both political science and sociology examining the role of female MPs in what is still a male-dominated environment. For example, Joanna McKay (2011)

investigates how female politicians in the UK and Germany navigate the conflicting demands of motherhood and political life. Joni Lovenduski (2012), Rosa Malley (2012) and Sarah Childs (2013, 2004) examine gendered cultures within the Commons. Their work draws on the tradition of 'new institutionalist' thought, which argues that the norms and rituals of parliament condition and constrain action. Institutions like Parliament consist of 'collections of interrelated rules and routines that define appropriate actions…. When individuals enter an institution, they try to discover, and are taught, the rules' (Chappell, 2006:161; see also Douglas, 1986; Lewis and Steinmo, 2012).

One study that has been particularly influential in this project is Nirmal Puwar's (2004, 1997) study of female and ethnic minority parliamentarians in the House of Commons. Puwar draws on the work of Bourdieu to argue that there are strong, yet implicit, norms governing life in the House of Commons. The 'habitus' or life-world of politicians, she argues, is implicitly gendered and racialised, yet white male politicians feel themselves to be neutral or unmarked. Puwar writes that 'there is a behavioural male norm and women are under assimilative pressures to conform to that norm' (1997:100). If politicians reject these norms, they risk damaging their social capital. No other study provided the level of detail or insight into politicians' identities and worldviews, which came to be of crucial importance to me in my research, both in preparing for, and analysing, research interviews.

2.3 Methodology

This section summarises the methodology of this project. Each published paper sets out the methodological approach in more detail.

The project proceeded as follows:
- Literature review
- Design of empirical work; ethical review and approval
- Corpus analysis of Hansard
- Focus group with practitioners
- Interviews with current and former Members of Parliament.

These stages are described in turn below.

Literature review

As described in section 2 above, the literature review was interdisciplinary, including literature from sociology, science and technology studies, political science, political theory and geography. A series of working papers was written, which were later incorporated into the published papers, and this supporting paper. During the literature review, I also looked at qualitative method, including focus group and interview techniques, 'elite' interviews, a review of other interview-based studies with politicians, and an investigation of biographical and narrative approaches.

Design of empirical work; ethical review and approval

The aim of this study was to provide a fine-grained, contextual account of the ways in which national politicians experience the issue of climate change. To do this, the study takes a mixed-method approach, inspired by what Sanford Schram (2013) calls "phronetic social science".

The term 'phronesis' refers to an Aristotelian categorisation of knowledge, described as "the practical wisdom that emerged from having an intimate familiarity of what would work in particular settings and circumstances" (Schram 2013:369). As such, it can be distinguished from *episteme*, or universal knowledge; and *techné*, or practical application of knowledge. Following this approach, this study aims to uncover politicians' phronetic knowledge. It scrutinises their innate understandings of the possibilities and constraints of their role, or what Sandford Schram and colleagues refer to as "the 'unconsciously competent' expertise that ought to be part of the scholarly endeavour". (Schram et al., 2013:271; see also Tyfield and Blok, 2016)

Phronetic social science can be seen as an approach rather than a theory, and its application is characterised by mixed-method, problem-driven research processes. In this case, the problem being addressed is how politicians understand and respond to climate change, and, following from this, how to develop better climate governance within the context of national political cultures and processes. I decided to use a number of contrasting research methods to address this core problem: corpus analysis of political speech, a focus group with environmental advocates, and narrative interviews with current and former Members of Parliament. A mix of methods helps to 'triangulate' research findings (Onwuegbuzie and Leech, 2005). It also allows

an iterative process, in that each stage was informed by the previous research, and participants were told about, and asked to reflect on, earlier research findings.

Ethical approval from Lancaster University's ethics committee was sought and received. The foremost ethical consideration was the need for anonymity for the research subjects, discussed below, and in Paper 3.

Corpus analysis of political speech
The first piece of empirical work used the technique of corpus analysis, to investigate the language that politicians use to talk about climate change in public speech, in the House of Commons. Corpus analysis is a method developed within linguistics, analysing large volumes of text, known as corpora, to identify patterns in language use (Sinclair, 2005; Wynne, 2005). I created a corpus consisting of 97000 words of speech from debates about the Climate Change Act, an Act of Parliament passed in 2008 which sets the framework for the UK's response to climate change. This corpus was compared with a 'reference corpus', a representative sample of language. The results were published as Paper 1, described in more detail in the next section.

Focus group with stakeholders
With the help of Green Alliance, I ran a focus group for representatives from non-governmental organisations who work with politicians on climate change. Representatives from Christian Aid, Green Alliance, the Royal Society for the Protection of Birds, the World Wildlife Fund and Greenpeace took part. I first asked them to relate their experiences of working with politicians on climate change. I then asked for their views on what motivates politicians. Finally, I talked through the main findings of the corpus analysis described above, and asked for reflections. The discussion was recorded, transcribed and coded using nVivo software.

Interviews with current and former Members of Parliament
Following the focus group, I began the first set of interviews with MPs and former MPs, in early 2016. Twenty-two people were approached, to secure the 14 interviews (66% acceptance rate). Participants were selected to provide a balance of age, gender, political party, seniority and length of time served as an MP. I used Riessman's (2008) narrative approach, focussing on eliciting narrative from interviewees, with the interview conducted as a free-flowing conversation. I asked participants to reflect on the way they work in general, and the influences and pressures upon them, before asking questions specifically about climate change, including their views on how it is discussed in Parliament, as well as their own viewpoint. Papers 2, 3 and 4 (summarised below) give more background to the methodology used for interviews and analysis.

The first set of interviews were all held in 2016, prior to the EU Referendum. The political hiatus following the Referendum provided a natural break point, with MPs very preoccupied about this significant change to UK politics. I judged that it would not have been worthwhile to contact MPs at this stage, as they would have been less likely to accept, and would have been distracted by Referendum / EU issues. I therefore waited until early 2017 to begin the

second set of interviews, conducting three in early 2017 before being stalled once more by the sudden election announcement. The six final interviews were conducted in late 2017 and early 2018. The acceptance rate for the second round was slightly lower, with 17 MPs approached to secure 9 interviews (53% acceptance rate), probably reflecting the more turbulent political circumstances.

In the second set of interviews, I focussed less on MPs' working practices and outlooks, and more on their views on the issue of climate change. This is because I felt I had enough data on these issues, and I felt that similar themes were recurring – I had reached a 'saturation point' (Kvale and Brinkmann, 2015). However I had less data on interviewees' understandings of climate change. Though I had discussed the issue with all of them, I had not had time in most interviews to develop and probe their responses to questions on climate change. Most interviews lasted 30-40 minutes, with current MPs in particular not willing to offer more time than this.

Thus I decided to approach the second set of interview differently. I started by summarising the findings of the first set of interviews, as presented in Paper 2. First, I asked interviewees to comment on these findings, before moving on to a more detailed set of questions about how they thought climate change could be addressed within the UK political setting. I asked each interviewee how political systems could acknowledge and face up to the material significance of climate change, at planetary scale, in a way that engages and is workable within current political systems (if indeed this is possible). I then asked them to reflect on what this means for the traditions and assumptions of politics; and lastly, how politicians could be supported in tackling these fundamental issues. The findings of the second set of interviews are discussed in Paper 5.

Table 1: Interviewees' background and experience (both interview sets combined)

gender	14 male, 9 female (gender balance of current Parliament is 71% male)
party affiliation	8 Conservative, 9 Labour, 4 Liberal Democrat, 2 other
time served as MP	Between 1 and 23 years' work as an MP; mean = 8.6 years
current status	12 sitting MPs; 11 former MPs, who left office between 2010 and 2017
seniority	9 interviewees had served in government; 4 had served on the opposition frontbench. 10 were backbenchers, most with experience on Select Committees.
record on climate change issues	7 with a strong record of activity on climate change issues (assessed through speeches in Westminster and elsewhere); 11 with some activity; 5 with little or no activity
participants were not asked for additional demographic data, eg age or ethnicity	

2.4 Summary of papers, and linkages between them

Here I summarise each of the five papers comprising this PhD portfolio, and then I describe the linkages between them, in the context of the overall project and research process.

Table 2 summarises the standing of each journal, and the reception of the publications, as indicated by citations, reviews and other feedback.

The papers are as follows:

> **Paper 1: Taming the Climate? Corpus Analysis of politicians' speech**
> Published in *Environmental Politics*, January 2017
>
> **Paper 2: How Members of Parliament Understand and Respond to Climate Change**
> Published in *The Sociological Review*, September 2017
>
> **Paper 3: The use of composite narratives to present interview findings**
> Published in *Qualitative Research*, July 2018
>
> **Paper 4: Constructing a 'representative claim' for action on climate change: Evidence from interviews with politicians**
> Published in *Political Studies,* January 2018
>
> **Paper 5: Governing earth systems: The role of national politicians**
> Submitted to *Global Environmental Change*, September 2018 (in review); accepted for presentation at the Earth Systems Governance conference, November 2018

The papers, as listed above, follow the sequence of the research process. Below, I summarise each paper and outline its position within the project as a whole.

Paper 1: Taming the Climate? Corpus Analysis of politicians' speech
Paper 1 provides an analysis of politicians' public speech on climate change. The data for the paper consists of 97000 words of spoken debate in the Chamber of the House of Commons, during the 2008 Climate Change Act. The data is analysed using techniques of corpus analysis, a method first used in linguistics but increasingly being applied in the social sciences. Given the relative rarity of this method in political research, the paper describes and discusses the applicability of corpus analysis in some detail, a point that was welcomed by reviewers. The paper concludes that politicians frame climate change narrowly, as an economic and technical issue, with very little discussion of people or the natural world. It evidences this with data derived from corpus analysis, for example, explaining that the language used to describe climate change is more technical and less people-focussed than discussions about economic policy. It also concludes that politicians shy away

from discussion of the more radical implications of climate change, particularly abrupt or irreversible change. I suggest that politicians attempt to 'tame' climate change, in order to find ways of making it an acceptable issue in political terms. However, such an approach, by definition, precludes more radical speech or action.

Reviewers of the original version of the paper commented on the novelty of the methodology, and therefore appreciated the empirical contribution that the paper made. However there was significant criticism of the theoretical stance, and a sense from all three reviewers that it was not clear whether or how the paper was grounded in a specific theoretical approach. The interplay between theory and empirical work, and the need to ground empirical enquiry within a theoretical framework, was something that I had to learn (or re-learn) for this PhD project. The second draft submitted to reviewers had a much tighter theoretical focus, using notions of 'framing' as discussed in the political science literature, and this was better received and accepted upon resubmission.

Paper 1 can be seen as preparatory research, to provide background and context to the interviews which form the basis of subsequent papers. The data for Paper 1 is drawn from publically available material. It consists of public statements made by politicians. By contrast, the data subsequently derived from interviews with MPs offers insights into private deliberations. The main insight of Paper 1 – that politicians 'tame' climate change, trying to frame it as a problem that is manageable within current structures and systems of politics – provided a foundation for the interview stage that followed. It demonstrated that an important aim for the interviews would be to encourage reflection on this very issue - to ask why it is that they might adopt the strategy of 'taming' the climate; and to ask how or under what circumstances individual politicians might feel able to consider and discuss the far-reaching implications of climate change. Although I had this aim from the beginning of the interview process, it still proved a very difficult question to address, as I discuss in section 5 above.

Paper 2: How Members of Parliament Understand and Respond to Climate Change
Paper 2 presents and analyses the results of the first set of interviews. It begins with a discussion of the role of national politicians in climate change policy and action. In this paper, I used a deliberately broad theoretical base, drawing from an interdisciplinary literature including sociology, political theory and science and technology studies, to investigate how politicians might navigate their working life. The paper outlines the methodological stance of the research, specifically the use of narrative interview techniques, and the presentation of data through 'composite narratives', combining data from several interviews to tell a single story. It presents four such narratives, and then draws out three more general conclusions. First, drawing on sociological analysis of identity, it concludes that politicians see climate change within the context of their professional identity and aspirations, and particularly, that many see climate as an 'outsider' issue. Second, drawing on theories of political representation, it discusses how politicians speak and act on climate

change depends on their understanding of their role as elected representatives. Third, it uses insights from science and technology studies to discuss how the day-to-day working practices of politicians affect the way in which they shape their aims and ambitions.

The main challenge of Paper 2 was the breadth of scope. I felt that each of the three themes merited more detailed discussion than was possible in a single paper, yet it was important to present the complete picture. I therefore persevered, and whilst there are areas that could have been further developed, I felt that the paper was a good reflection and analysis of the issues raised in the interview set. Though I had expected peer reviewers to make criticisms about the breadth of the paper, this did concern them; in fact, reviewers praised its "broad theoretical approach". As one wrote, "The author does a very good job at summarising three distinct sets of literature (sociology, political science and STS) and relating the conclusions back to these literatures. The resulting broad theoretical framework makes a lot of sense to me, and places this paper in line with the journal's manifesto for interdisciplinarity."

In writing up the interview data for Paper 2, I wanted to convey a rounded account of the politicians, as individuals. It did not seem appropriate to 'disembody' each interviewee, by categorising them in groups according to pre-defined criteria such as political party, gender, or seniority. To do so would not have been in keeping with my methodological approach. I wanted to present them as people, not categories. However, I also needed to ensure anonymity. Even if names are changed, politicians can be easily identified, by a combination of characteristics such as their constituency or party; length of time served; age; gender and so forth. I therefore presented the data as 'composite narratives', in which data from several interviews are combined to form a single narrative. Having had the idea to present the data in this way, I trawled the literature on social science methods, thinking that it might be a common or recognised approach. I was surprised to find that it was not widely used. I found some accounts of similar approaches in the literature on psychoanalysis, and educational research, but found no codified methods for composite narratives. This is why I decided to write Paper 3, which sets out my approach to composite narratives, in more detail than was possible in Paper 2.

Paper 3: The use of composite narratives to present interview findings
Paper 3 was published in the journal *Qualitative Research* as a 'research note', a short paper describing a methodological approach or challenge. The paper reviews the use of techniques similar to my approach, drawn from research in the fields of psychoanalysis, education and health. It describes how I, and the reviewers of my previous paper, wanted a more structured, transparent approach to the development of narratives than previous applications had shown. It then charts the process I developed to present data as composite narratives. The paper discusses the benefits of presenting research as composite narratives. The technique conveys the complexity of individual accounts, without compromising anonymity. It can also provide insights which can be used to guide action, in this case, helping those who work with

politicians to understand their position and motivations. The paper concludes with a discussion of the limitations of the approach, particularly the need for the researcher to convey faithful, yet anonymised portrayals of individuals.

Paper 3 was written after Paper 2, and was greatly helped by the review comments on Paper 2. In the first draft of Paper 2, I had presented four composite narratives, but did not take the time to describe the way in which I had developed the narratives. Reviewers wanted more detail and justification for the method. I therefore developed a more formalised description of the method I had used, which I outlined briefly in the revised manuscript. It was this that formed the basis of Paper 3.

Paper 3 was favourably received by the journal and by reviewers. The main revisions requested were to add a more explicit discussion of the way in which the composite narrative technique is one possible solution to a more general issue of how to present qualitative data. As a reviewer wrote,

> I would suggest that the use of composite narratives emphasises the nature of all qualitative research and writing…. We use our comprehension of the research setting and our sociological/qualitative research expertise to create, cut up and recombine our data in order to tell a 'sociological truth'.

The final version of Paper 3 thus included a more explicit discussion of the role of the researcher's judgement and understanding in presenting qualitative data.

Paper 4: Constructing a 'representative claim' for action on climate change: Evidence from interviews with politicians

As described above, Paper 2 summarised three themes that emerged from the interview set. One of these, the issue of representation, seemed to me to merit further analysis, because representation, however conceived, is central to the role of an elected politician. In writing Paper 2, I had explored the literature on political representation, and particularly, a new approach to the theory of representation, Michael Saward's idea of 'the representative claim'. I decided to develop this analysis further, through a separate paper, Paper 4.

Paper 4 discusses how politicians understand their representative role, and the implications of this for political action on climate change. It analyses the interviews through the lens of the theory of the 'representative claim' developed by Michael Saward. This approach sees representation as a dynamic process of claims-making, as an interaction between the representative and those they claim to represent. After a brief discussion of the methodology behind the research, the paper identifies four different types of 'representative claim' made by the politicians in the study. A 'cosmopolitan' claim stresses that it is in the interests of all humans to act on climate change, and therefore the duty of politicians to act. A 'local prevention' claim, by contrast, asserts that action is required in order to prevent climate change impacts on the local area, such as flooding or other extreme weather events. Through a 'co-benefits' claim, politicians assert that taking action on climate

change has other benefits, such as reduced fuel bills from energy efficiency measures, or jobs in new industries, and therefore has a double dividend. Last, some politicians choose not to speak out on climate change even though they might privately believe that action is necessary. Instead, they justify any proposals in other ways, for example, arguing for better transport measures to improve congestion, whilst deliberately avoiding discussion of potential benefits to climate change through reducing carbon emissions. I call this a 'surrogate claim'. The paper concludes with a discussion of ways in which politicians could be better supported to speak out and act on climate change.

Paper 4 offered me an opportunity to apply a single theoretical approach, that of the 'representative claim', to my research question and data, in contrast to the wider, more interdisciplinary scope of Paper 2. It was rewarding to dive deep into one specfic theory, and to test this with my data. This application of a new theory was noted by a reviewer of the paper, who wrote that it "genuinely does bring current theory and empirical work together". This paper was well received by reviewers, with relatively minor amendments required.

Paper 5: The role of national politicians in Earth System governance
In the final paper, my aim was to draw together the findings of the research project as a whole, and write them up for a different audience. Whereas previous papers were written for social science journals, the final paper is aimed at the interdisciplinary *Global Environmental Change*. This journal is read widely by those in the climate science and policy community. The aim of this paper, then, is to bring the research to the attention of a more general climate policy readership. The paper enters into dialogue with those researchers pursuing the concept of 'Earth System Governance'. The paper will also be presented at the Earth System Governance Conference in Utrecht, in November 2018.

The paper begins with a description and critique of Earth System Governance, and its application to climate change policy and politics in the UK. It argues that much of the Earth System Governance literature has focussed on analysing what governance structures are needed, in abstract terms; and that closer attention must be paid to questions of *how* such governance can be developed, and steered through political systems. It then presents a summary of the data from this project, incorporating the corpus analysis, focus group and interview findings.

The paper argues that few politicians have yet been able to operationalise their understanding of climate change into meaningful responses at the national level. There are three main reasons for this. First, the literal and metaphorical scale of challenges at the earth system level conflict with the procedures and preoccupations of daily politics. Second, politicians consider the climate issue in the context of their professional identity and the cultural norms of their workplace, and report that climate action does not 'fit' with these norms. Third, UK politicians feel very little pressure from their electors to act on climate change, and have to work to build a democratic case for climate action. The paper concludes with recommendations for research and practice.

Paper 5 can be seen as a summary paper, in that it uses all the data generated from the study (in comparison with Paper 1, which reports on corpus analysis alone, and Papers 2 and 4, which just use interview data). This proved to be the main challenge of the paper – to provide a broad overview of methodology and results, and to use that to develop an overall argument, in the limited space offered by a journal paper. A related challenge was presenting my work for a journal with a different readership. Readers of *Global Environmental Change* are more likely to be researchers with backgrounds in environmental science and technical governance domains, rather than sociology or political science or theory, and may not use qualitative research methodologies. As many scholars have noted, the challenge of speaking across disciplines can be considerable (Barry, 2012; Castree, 2017).

Taken together, the four substantive papers, together with Paper 3, the methodological 'research note', provide four linked answers to the central research question, how politicians understand and respond to climate change.

Possible further papers

These papers did not exhaust the data. I would like to use the data to write the following papers:

- The question of politicians' identity, and the way in which it frames their approach to climate change, which I referred to in Paper 2, could be developed in more detail for a sociology journal.
- The issue of politicians' working practices, and how they mould climate change into a 'do-able problem', was discussed in Paper 2 but could be further developed, using relevant literature from science and technology studies, for a journal addressing these issues.
- A theme common to many reviews of these papers was the issue of time horizons, and the interplay between the short- and long-term in politics. I could write a further paper on this issue, drawing on sociological accounts of time, and political science analysis of time horizons in politics.

Table 2: List of papers, journal rankings, article downloads, citations and altmetrics (information as of 1/9/18)

Paper	Publication date	Journal	Journal impact factor (5 years)	Journal ranking	Article downloads	Google Scholar citations	Altmetric score
Paper 1: Taming the Climate? Corpus analysis of politicians' speech on climate change	January 2017	*Environmental Politics*	2.373	41/165 (Political Science) 43/105 (Environmental Studies)	2167	6	20
Paper 2: How Members of Parliament understand and respond to climate change	September 2017	*The Sociological Review*	2.169	25/146 (Sociology)	1740	3	77
Paper 3: Constructing a 'representative claim' for action on climate change: Evidence from interviews with politicians	January 2018	*Political Studies*	2.320	50/169 (Political Science)	720	1	47
Paper 4: The use of composite narratives to present interview findings	July 2018	*Qualitative Research*	3.512	5/98 (Social sciences, interdisciplinary) 16/1146 (sociology)	261	-	1
Paper 5: The role of national politicians in Earth System governance	Under review	Submitted to *Global Environmental Change*	not yet published				

2.5 Implications for practice

As this research project was designed as a collaborative project, working with Green Alliance, there has been interaction with practitioners throughout. Some of this was planned into the research process, and some was more opportunistic, emerging during the course of the research. Below I set out how this work helped Green Alliance and other practitioners.

Working with Green Alliance
As I describe in the introduction, this project emerged out of Green Alliance's Climate Leadership Programme. The Programme provides workshops and other support to MPs to encourage them to consider the implications of climate change for their work as a politician. Green Alliance agreed to be a partner in the research, which was established as a CASE Studentship between Lancaster University and Green Alliance, funded by the UK Economic and Social Research Council.

Green Alliance provided both practical and intellectual input into the project. Green Alliance's director (until 2017) Matthew Spencer, and deputy director Tamsin Cooper, advised on the design and scope of the project. Green Alliance hosted the focus group of practitioners from non-governmental organisations who work with politicians on climate change (see section 4). The politics team, who work closely with parliamentarians, advised on potential interviewees, and offered guidance on interview questions. Recruitment for the focus group and interviews was helped by explaining that it was a collaborative project. Green Alliance is known and respected amongst MPs and others. The high acceptance rate for interviews (66% in the first round, 53% in the second round) can be explained in part by Green Alliance's involvement.

Green Alliance has helped to disseminate research findings, primarily through publishing articles on their *Inside Track* blog (see annex), and through social media. Each time an academic paper was published, I wrote a short blog for the site, summarising the findings and linking to the paper, which was published Open Access to enable access from those from outside the academic sector. Publicised on Twitter, the blogs were widely read and discussed, as can be seen from the 'altmetric' scores (see table above). I have also written a short policy briefing summarising research findings from the project as a whole, which will be published in the Autumn.

When the blogs were published, I wondered if some of my findings might seem obvious or self-evident to practitioners. However, the feedback I received indicated that the research was useful even to those who work with politicians on a daily basis. It provided them with an opportunity to step back and reflect on their practices and working relationships.

Findings from the project are now being used to inform work planning and funding bids for a new programme of work on Climate Leadership, as well as wider strategy discussions. Green Alliance have recently been successful in winning funding for a further package of work with MPs, including the

establishment of a Citizens' Assembly on Climate Change, which was a direct recommendation of this research. The work will begin in 2019.

A further unexpected impact has been to increase Green Alliance's engagement with the university sector. I have been able to advise them on developing collaborative research bids on other topics, such as a successful bid led by Cardiff University on materials and resources issues.

Other interactions

The research has also been used by a range of organisations outside academia, who are interested in the way in which climate science and policy proposals are understood by MPs. Following an introduction by Green Alliance, I advised The Climate Coalition, a partnership of civil society organisations who encourage individuals to take action on climate change, including contacting MPs. I contributed to the evaluation of their 'Share The Love' campaign aimed at politicians. The campaign asked supporters of the Climate Coalition's member organisations to contact their MP to show their support for climate action (The Climate Coalition, 2018). I also advised Hope For The Future, a specialist charity providing support for people who want to contact their MP to discuss climate change. They have used research findings to inform the briefings and training that they provide. I worked with a Scottish organisation, the 2050 Climate Group, to provide training for young Climate Leaders in Scotland on how to engage MPs, again based directly on the research findings. Further sessions will be offered by Green Alliance to NGO practitioners later in 2018.

During the course of my research, I have presented findings to a range of audiences, including the following:
- Invited plenary speaker at the Royal Society Science Plus meeting, *Decarbonising UK energy: effective technology and policy options for achieving a zero-carbon future* (2017)
- Invited speaker at British Academy / DECC / Royal Society / Government Office for Science private roundtable *Language, Communication, Energy and Climate Change* (2016)
- Seminars at the Universities of Lund and Linköping, and the Stockholm Environment Institute during a Visiting Fellowship at the Centre for Environmental and Climate Research, Lund University, Sweden in 2016
- Invited participant at Lorentz Centre workshop, *Decarbonising Futures: Narrating Low-carbon Societies*, Leiden University, Netherlands (2016)
- Seminars at the Universities of Leeds, Sussex and Cambridge.

2.6 Limitations of this research, and future research

This project has focussed on one influential group in climate politics: Members of the UK Parliament. The main limitation of the study was that it was restricted to a small group of politicians in one legislature. However, the method of inquiry used in this study could be applied more widely. During the course of my research I have identified a number of different areas for further research, which I outline below.

Politicians at other levels of governance, such as cities, municipalities and local authorities, as well as the UK's devolved nations, could be studied in the same way. Many cities, in particular, now have their own climate change strategies and targets. How do local politicians understand climate change, and how does this shape local strategy? Interviews with local politicians would provide useful evidence to investigate the potential for more localised responses to climate change. If a larger study of politicians were undertaken, it might be possible to test whether politicians from different parties, or ideological outlooks, understand or respond to climate change in different ways.

Similarly, politicians in other legislatures could be interviewed. A comparative approach across different legislative systems would reveal whether different political systems result in different strategies. For example, my research has shown the dilemmas faced by MPs in the UK, who are elected to represent a geographical constituency, and the strategies they use to link the global issue of climate change to the needs of their local area. This evidence would suggest that strategies would be different in a different political system, such as proportional representation based on a national list, as used in Scandinavia, for example; or in federal political systems like Germany or the US. An even more intriguing question is how politicians in countries without elections think about these issues, particularly in China, given its geopolitical importance and its new-found role as a climate leader (Tyfield, 2018).

The reliance on interviews in this study is a limitation, in that it focuses on what politicians say rather than what they do. This could have been addressed through additional ethnographic observation of MPs at work, both in public settings and in private meetings, if consent could be obtained.

The methods used to study politicians in this research could also be used to study other actors in the policy and political process, including for example civil servants, business groups and advocacy organisations. How do individuals from these groups 'frame' the issue of climate change? Are they, like the politicians studied here, worried about being seen as outsiders if they present too radical an account of climate problems or solutions? What assumptions do they make about how other actors are seeing the issue? These questions could be addressed through ethnographic observation of policy discussions, for example at policy seminars, conferences or informal meetings of stakeholders involved in the climate debate, combined with anonymous interviews. I have already applied the learning from my doctoral research in a project that I am contributing to, Assessing the Mitigation

Deterrence Effects of Greenhouse Gas Removals. This project looks into the risks of greenhouse gas removal technologies delaying or deterring mitigation. Like my doctoral study, this project uses a phronetic social science approach, investigating the motivations and outlooks of individuals involved in greenhouse gas removal technologies and strategies.

Last, as discussed in Paper 4, the MPs in this study did not feel any pressure from those they saw themselves as representing, to act on climate change. However, the study only looked at one side of this: the representative, not the represented. To examine the issue of representation and climate change more comprehensively, MPs could be brought together with groups of constituents. Together, the politicians and those they represent could discuss how they see the climate problem and possible solutions. Advocates of deliberative democracy argue that such processes would help politicians to develop their mandate on climate change (Dryzek and Niemeyer, 2008). Members of Parliament, together with local politicians and other stakeholders, could use deliberative processes to discuss climate strategies which would benefit local areas. This could follow the model of participatory budgeting, for example (Davidson and Elstub, 2014).

Part B: Journal Papers

Paper 1

**Taming the Climate? Corpus Analysis of
politicians' speech**

Published in *Environmental Politics*, January 2017

Routledge
Taylor & Francis Group

Taming the Climate? Corpus analysis of politicians' speech on climate change

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ABSTRACT
The politics of climate change is much discussed, but there has been little investigation into how politicians themselves understand or articulate the issue. Corpus analysis, a method developed within linguistics, is used to investigate how UK politicians talk about climate change, using the example of the 2008 Climate Change Bill. Corpus techniques, including keyword analysis, collocation and semantic tagging, are used, alongside critical reading of the text. The analysis shows that politicians frame climate change as an economic and technical issue, and neglect discussion of the human and social dimensions. They are selective in their use of scientific evidence, with little mention of abrupt or irreversible change. In doing so, they attempt to 'tame' climate change, rather than confronting difficult realities. While this strategy has the benefit of political acceptability, it does not allow for discussion of the full political and social implications of climate change, and precludes more radical responses.

Introduction

It is difficult to overstate the challenge that climate change poses for politics. As evidenced by the Intergovernmental Panel on Climate Change (IPCC), climate change is likely to cause instability and uncertainty in both natural and human systems (IPCC 2014). This instability, together with the challenge of achieving significant emissions reductions, has far-reaching implications for the way in which politics is done. The politics and governance of climate change have been much discussed (e.g. Giddens 2009, Swyngedouw 2010, Steffen *et al.* 2011, Urry 2011, Biermann *et al.* 2012, Dalby 2013, Dryzek 2014, Johnson *et al.* 2014, Latour 2014). Yet, there has been very little attention paid to a crucial group of individuals at the centre of this challenge: the politicians themselves, who, working through

institutions at the global, national and local levels, have the task of mediating responses to complex climate-related problems.

How do politicians understand and articulate an issue as complex as climate change? A recent comprehensive literature review found very little research into this issue (Rickards *et al.* 2014), a useful exception is Fielding's *et al.* (2012) survey of Australian politicians). In the research presented here I begin to address this gap, using corpus analysis of speech by Members of Parliament (MPs) in the UK to analyse how politicians conceptualise and present climate change as a political issue in their discussion of the 2008 Climate Change Bill. The research is part of a collaborative project between Lancaster University and the think tank Green Alliance, who since 2009 have run the Climate Leadership Programme, which introduces MPs in the UK to the science, policy and politics of climate change.

I begin with a discussion of the way in which politicians, rather than responding in a straightforward or linear way to climate science, actively craft and shape the issue to fit with their outlook, and those of their supporters and other actors. I draw on the literature on 'framing' in politics (Downs 1972, Hajer and Forester 1993, Kingdon 1995, Cobb and Coughlin 1998, Benford and Snow 2000) to discuss how issues come to be seen and described in particular ways; and examines the central role of language in defining political positions and issues (Fairclough 2000). Two aspects of 'framing' are considered: first, how climate change is discussed – what type of language is used; and second, what aspects of climate change are excluded from debate.

I then introduce corpus analysis, a method developed within linguistics, to discuss how the technique can provide empirical evidence for such framing processes. The critical advantage of corpus analysis is the ability to handle large quantities of text, thereby spotting patterns and styles of speech that may not otherwise be evident. For this research, a corpus of 97,000 words was created from Hansard, the online record of parliamentary speech. The corpus was analysed using three techniques: keyword analysis, examining the frequency of significant words in comparison to other corpora; collocation analysis, investigating which words are used together and offering insights into the meanings given to key terms; and semantic tagging, which compares the relative frequency of use of groups of words which share similar meanings.

Corpus analysis demonstrates that MPs used a scientific and economic framing to discuss the Climate Change Bill. In doing so, they exclude discussion of the environment or non-human species. There is also very little discussion of people or social factors. Further, their use of science is selective, with risks of abrupt or irreversible climate change downplayed or ignored.

I conclude with a discussion of the reasons for, and implications of, such discourse. I suggest that politicians are attempting to 'tame' the climate by framing a difficult, complex issue in a less threatening way, and suggesting

technical and economic solutions, but this means that they do not discuss the far-reaching implications of climate change for political and social life. I suggest ways of bringing about a more comprehensive treatment of climate change in politics, and also offer reflections on the use of corpus analysis in the study of politics.

Understanding political speech on climate change

While politicians are not the only actors in climate politics, their role is crucial. Many, if not most, proposed responses to climate change require legislative action. This in turn requires politicians to advocate, act and monitor. Yet politicians' reasons for acting, or indeed not acting, on climate change are not well understood. Consumer behaviour is put under intense scrutiny (Jackson 2005) and the strategies of corporate leaders are analysed (Wright *et al.* 2012, Rickards *et al.* 2014), but much less has been said about political decision makers. Discussions of politics and governance tend not to examine the motivations or outlooks of the people who do the politics, but use the terms 'governance' and 'politics' in the abstract (see, e.g. Dalby 2013, Dryzek 2014; Lövbrand et al., 2009).

It is clear that politicians do not respond to scientific evidence on climate change in a simple or linear way, and neither should we expect them to. Indeed, the way in which all people understand and interact with scientific evidence is complex (Wynne 1996, Demeritt 2001, Hulme 2009, McNeil 2013). Yet an assumption persists, particularly among the scientific and policymaking communities, that scientific evidence will translate straightfor-wardly into political action (Hajer *et al.* 2015). Hajer et al. coin the phrase 'cockpitism' to describe the illusion of a simple and smooth progression from scientifically defined issue, to international agreement, implemented by national governments acting in the best interests of the planet as a whole.

In reality, it has long been understood that politicians do not passively translate evidence into appropriate action, but instead, whether consciously or not, shape an issue to fit with their ideology, the views and opinions of voters and other actors, a sense of what is achievable, prevailing norms and assumptions and so on (Downs 1972, Hajer and Forester 1993, Kingdon 1995, Cobb and Coughlin 1998, Benford and Snow 2000). This 'framing' process influences both *how* issues are discussed, including what type of language is used; and *whether* certain aspects of the issue are discussed at all, or if they are instead ignored. These are discussed in turn below.

Framing: how issues are discussed

As noted above, the way in which climate change is discussed in Parliament and elsewhere is framed by politicians and other actors. Framing can be

understood as 'signifying work or meaning construction … an active, processual phenomenon' (Benford and Snow 2000, p. 614), an ongoing process of describing and defining an issue to fit with the aims of a particular group or movement. Such framing happens with all issues, but is particularly apparent with complex risk issues like climate, which are both caused by, and understood through, the interplay of technology and society. As Ulrich Beck argues, such risks are mediated: 'Without techniques of visualisation, without symbolic forms, without mass media, etc., risks are nothing at all' (Beck 2006, p. 332). So the question of who visualises or gives form to risk is all important.

One of the most crucial ways in which such framing takes place is through language. Norman Fairclough writes that 'political differences have always been constituted as differences in language, political struggles have always been partly struggles over the dominant language' (2000, p. 3). This is not to say that political struggles can be reduced to linguistic struggles; rather that language is a crucial way in which different political groupings assert their positions and generate alliances. In Hajer's conception of 'discourse coalitions', argumentation is 'the medium through which actors try to impose their view of reality on others, suggest certain social positions and practices, and criticise alternative social arrangements' (Hajer and Forester 1993, p. 47). Thus discourse helps to frame and direct political outcomes. It is 'socially *constitutive* as well as socially shaped' (Wodak and Fairclough 1997, p. 258).

In the late 2000s, the UK Labour Government made a conscious choice to frame climate change as a discussion about economics, with the publication of the government-commissioned Stern Report in 2007. Stern, an academic economist and government adviser, presented climate change as a 'market failure', and estimated the monetary costs and benefits of climate action (Stern 2007). Though controversial, this approach won the support of business groupings and helped to build the cross-party support which contributed to the successful passage of the Climate Change Act (Carter and Jacobs 2014). The Labour administration's strategy can be seen as part of a wider trend towards using economic language and policy instruments to achieve environmental goals, termed 'ecological modernisation' (Hajer 2000).

Framing: whether an issue is discussed at all

It is also important to consider which issues, or aspects of an issue, are not discussed at all. As noted above, strong scientific evidence does not automatically lead to a response commensurate with the problem. The complex way in which an issue finds a place on the formal political agenda has been discussed at length in the political science literature (Bachrach and Baratz

1962, Kingdon 1995, Solecki and Shelley 1996, Cobb and Coughlin 1998).
Kingdon's (1995) conception of 'policy windows', for example, maintains that
an issue reaches the political agenda when three 'streams' converge: a well-
defined problem; proposed solutions such as policy mechanisms; and political
support for the issue. Carter and Jacobs (2014) use this model to explain the
cross-party support for climate change in the UK Parliament in the late 2000s.

Some issues, however, are not taken up by the formal political process.
Bachrach and Baratz (1962) noted the need to study 'non-decision-making',
or the ways in which dominant influences and assumptions prevent dis-
cussion of some issues. Similarly Crenson (1971), in his empirical study of
the politics of air pollution, showed that where particular interests dom-
inate (in this case a steel company) politicians are inhibited, and do not
speak out. What follows is not argument, but silence; hence the title of
Crenson's book, *The Un-politics of Air Pollution*.

An example of the 'un-politics' of climate change is the lack of discussion,
within the formal political sphere, of society's dependence on fossil fuels.
Phelan et al., writing from a neo-Gramscian perspective, describe the hege-
mony of the 'fossil fuel historical bloc' Phelan *et al.* 2012. Mitchell (2011), goes
a step further in claiming that modern democratic systems themselves are a
product of fossil-fuel exploitation. Radical ecologist William Ophuls (1992)
argues that modern societies and political systems are made possible by
abundant natural resources and a stable environment, and that scarcity and
environmental instability would threaten the viability of liberal democracy. If
climate change alters the operating conditions for politics, that undoubtedly
makes it a difficult issue to address within a formal parliamentary setting.

Using corpus analysis to understand political treatment of climate change

Here, I use corpus analysis to evidence UK politicians' approach to climate
change, with reference to these two aspects of framing: first, how the issue is
discussed; and second, whether certain aspects are discussed at all: what gets
left out? As I set out below, corpus analysis provides strong evidence that MPs
talk about climate change using an economic and technical discourse. There
are significant gaps in the discourse too, particularly an absence of discussion
of people, the environment or other species; the social impacts of climate
change and policies to address it; and a reluctance to discuss the possibility of
abrupt or irreversible climate change.

Why corpus analysis?

Corpus analysis is an approach developed within linguistics, analysing large
volumes of text, known as corpora, composed of speech or written language

(Sinclair 2005, Wynne 2005). Software packages are used to identify patterns in language use, including the relative frequency of different words, and collocation, words which frequently occur together. Specific corpora can be compared with a 'reference corpus', a representative sample of language, such as the British National Corpus (BNC).

Such analyses originally informed the study of language, and linguists noted a crucial advantage of corpus methods: they uncover patterns or styles of speech that may not otherwise be seen by researchers. As John Sinclair, one of the founders of corpus linguistics, wryly observed, 'Language users cannot accurately report language usage, even their own' (Sinclair 1994, p. 7). Thus the statistical techniques of corpus analysis allow researchers to uncover patterns and traits of language use which are not immediately apparent to the users, teachers or analysts of that language.

This characteristic of corpus analysis – the ability to 'start with the text', using statistical techniques to uncover patterns in language that might not be apparent to a reader – makes it a useful technique for social science research too. As Partington (2012, p. 12) writes,

> At the simplest level, corpus technology helps find other examples of a phenomenon one has already noted. At the other extreme, it reveals patterns of use previously unthought of. In between, it can reinforce, refute or revise a researcher's intuition and show them why and how much their suspicions were grounded.

The potential of corpus analysis for social sciences has been recognised in recent years, with use of the method increasing (e.g. Baker *et al.* 2008, Caldas-Coulthard and Moon 2010) and some work looking specifically at language and climate change (Fløttum *et al.* 2014, Dayrell and Urry 2015).

Although corpus analysis uses statistical techniques, as with all such techniques its findings are not generated automatically but rely on the judgement of the researcher, who decides which texts to input, what analysis to undertake, what cut-off points to apply and so on (Baker *et al.* 2008). As such, it is an addition to, rather than a replacement for, a more qualitative discourse analysis, through detailed reading with consideration of the social, cultural and political context (Weiss and Wodak 2002). Combining corpus analysis and discourse analysis in an iterative process ensures that the right texts are used, and that insights gleaned from statistical analysis can be contextualised and explained (Baker *et al.* 2008, Wild *et al.* 2013, Baker and Levon 2015). This is the approach I take here.

Previous corpus analyses of Hansard offer useful insights into politicians' motivations and strategy (Baker 2004, Perren and Dannreuther 2013). For example, Baker's (2004) study of discourses of homosexuality within the House of Lords reveals a significant difference between the discourse used by those for and against reform of the age of consent for gay men. The

methodological norm, however, is for corpus linguists to extend their analysis into social science, rather than social scientists using tools of corpus analysis (Partington 2012), which makes the study described here atypical.

Method

I use corpus methods and critical discourse analysis (CDA) to investigate a key moment in UK climate politics: the discussion of the Climate Change Bill, which became an Act of Parliament in 2008. This Act set a framework for action on climate change, including statutory targets for carbon reduction, and established the independent Committee on Climate Change to advise and monitor progress. The Act had strong cross-party support, with all major parties on side and only five MPs voting against. This represented a significant breakthrough in UK climate politics, with high levels of party political consensus, though these were somewhat undermined the following year by controversy surrounding leaked climate emails and the failed Copenhagen negotiations, as Carter (2014) documents.

Preparation of corpora

I prepared two new corpora for this research: the Climate Change Bill (CCB) Corpus, and the Budget Corpus. I also used an already existing reference corpus, the BNC Sampler Spoken.

The CCB Corpus consisted of MPs' speech from the two main opportunities to debate the Bill on the floor of the House, in June and October 2008. As described above, the debates took place at a time of relative consensus in climate politics, and before the full effects of the economic downturn had been felt (Carter 2014). In June, in the so-called 'Second Reading', traditionally the stage at which the purpose and content of a Bill is debated, there was a 6-hour discussion. In October, MPs returned to the Bill for a shorter discussion of draft amendments. Speech from these two debates was combined to create the CCB Corpus, consisting of all 97,000 words from the two debates, downloaded from Hansard online. Combining the two debates provided a comprehensive corpus of political speech on the Climate Change Bill.

As described above, corpus analysis relies on comparison of the corpus under consideration with reference corpora. It is through comparison with other texts that significant patterns emerge. For example, examining word frequency without a reference corpus tells you that words such as 'and', 'to' and 'the' are frequent, but this does not shed light on the particularities of the speech under consideration. Examining word frequency in comparison

with a reference corpus reveals the way in which the speech in question is distinctive or different (Wynne 2005).

For this research, I used two reference corpora. First, I used a standard reference corpus, the BNC Sampler Spoken, which is a representative sample of spoken English, comprising approximately one million words of spoken English derived from public and professional settings (British National Corpus 2008). Comparing the Climate Change Bill speech with this standard reference corpus shows the differences between standard speech and the debate in question, revealing significant patterns.

The research also aimed to examine how MPs' speech on climate change differs from other speech in Parliament. For this reason, a second reference corpus was used, derived from another parliamentary debate of the same year – the 2008 Budget Debate. Comparing a budget debate with a climate debate reveals the particularities of how MPs talk about climate change. This corpus consisted of the full 50,000 word debate on the March 2008 Budget, and was named the 'Budget Corpus'.

The CCB Corpus and the Budget Corpus were prepared through downloading the debates from the Hansard website. Hansard is not strictly verbatim, as speech is lightly edited, which can pose a problem for some corpus studies (Molin 2007); however, this did not matter in this research, which focuses on the context and style of speech, rather than linguistic detail.

Analysing the corpora

In analysing the corpora, I made use of three corpus analysis techniques: keyword analysis; collocation analysis and semantic tagging.

Keyword analysis: Keyword analysis reveals which words occur frequently in the text under study, compared to a reference corpus. I analysed the CCB corpus using the Wmatrix programme, which allows the corpus to be compared to other corpora (Rayson 2008). The CCB corpus was compared with both the BNC Sampler Spoken Reference Corpus and the Budget corpus. Tables of words that were comparatively over- and under-used were compiled, and patterns were identified, as described in the results section below.

Collocation: I analysed keywords further through looking at their collocates, or words which frequently occur together with the keyword. This was done with a different software package, AntConc. Collocation shows which words frequently occur within a set span of text either side (usually the five words before or after the keyword, or 'node') and allows analysis of the way that the keyword is used, thus providing the 'atmosphere' of a word (Baker *et al.*2008).

Semantic tagging: Wmatrix software enables the text to be tagged, with words grouped into categories of meaning, or semantic fields, to look at which semantic groupings are used more or less frequently in comparison to another corpus. This allows trends and patterns to be identified which may not be observable at the level of individual words. For example, the semantic category 'work and employment' contains words such as work(ing), staff, (un)employment, jobs and employees. These individual words may not register as keywords on their own, but together they could form a key semantic group (Rayson 2008). As with keyword analysis, I compared semantic groupings in the CCB corpus with the two reference corpora. Lists of under- and over-used semantic groupings were scrutinised.

Combining corpus analysis with critical discourse analysis

As described above, when used in social science research, corpus analysis is best combined with CDA. CDA can be seen not as a specific, prescribed method but as a broad theoretical orientation, which combines close reading of the text with consideration of the social, political and cultural context of the text (Weiss and Wodak 2002, Baker *et al.* 2008). In this research, CDA was used both to situate the corpora – for example, incorporating an understanding of the significance of the Climate Change Act in UK climate politics; and to explain findings from corpus analysis through qualitative interpretation of MPs' speech.

Findings from corpus analysis of the 2008 Climate Change Bill

The techniques described above reveal clear patterns of discourse in the discussion of the CCB, pointing to particular framings of climate change as an issue. Below, I discuss two aspects of this framing: first, the way in which climate change is discussed; and second, what is not discussed at all.

How is climate change discussed?

The language used by politicians to discuss the Climate Change Bill is strongly scientific and economic in nature. Turning first to scientific evidence, in the debate on the Climate Change Bill, the words *science, scientific* and *scientist(s)* occur very regularly (128 occurrences), as shown in Table 1. Many speakers open their statements with reference to the science. This is true for those who support the scientific consensus, as represented by the IPCC, as well as those who are sceptical, or questioning of the prevailing consensus.

Table 1. Typical use of words 'science', 'scientist(s)' and 'scientific' (CCB Corpus).

Typical use of words 'science', 'scientist(s)' and 'scientific' (CCB Corpus)

implying scientific consensus (90 occurrences)

within the overall 2 C increase limit, which	scientists	say should not be exceeded
if the worst-case scenarios of the	scientists	are realised we will be in deep trouble
that can support human life can work. The	scientific	consensus is that there tends to be
governments must follow the latest	science	that clearly shows the need for the UK to
important Bill because, as is clear from the	Science	and the IPCC, these matters are

implying lack of scientific consensus (38 occurrences)

A bit like medicine in the 1850s. The	scientists	are scratching the surface of
The most recent survey of climate	scientists	indicates that 46% of them disagree
If it is not, there is a danger that it is not a	scientific	report, but more of a political one
down to the activities of man. There is no	scientific	consensus on this, and there have been
discussion in the debates as though all the	science	was settled, but my reading of it is that

Table 2. Typical use of words within semantic grouping 'cause and effect/connection'.

Typical use of words within semantic grouping 'cause and effect/connection'

human activity is by far the principle	cause,	and that with global action to reduce
from consumer activity in this country, is	responsible	for about 15 per cent of global emissions
rainfall and increased flooding are a direct	result	of the climate change that we are already
rises in fuel and food prices are of course	related	The prospect of an economic downturn
scientific knowledge: economic and social	implications	will also need to be taken into account
carbon pollution completely overnight, the	effects	of existing levels of CO2 in the

However, in using this language, politicians are not merely reflecting the scientific consensus. They are using scientific language selectively, to build their case. This can be seen through analysis of semantic groupings. Table 2 shows that a very significant semantic grouping, compared to standard speech in the BNC Corpus, is 'cause and effect/connection', including words such as *produce/impact/responsible/cause/effect*, suggesting that speakers are trying to build a case for action on climate change.

These patterns of speech suggest that when politicians are talking about climate change, they have to work hard to justify climate action. Detailed reading of the text shows that speakers tend to open with a statement on the science, and an explanation of causes and effects, before proceeding to discuss solutions. Although, in the debate under analysis, climate sceptic views were a small minority, all speakers had to justify their positions through recourse to the science. Even those who strongly support action on climate change feel the need constantly to explain why, suggesting that they see the case for action as fragile. This is not helped by the complex and indirect impacts of climate change, which means that politicians not only have to state the science but they also have to explain the links and connections of both climate impacts and climate solutions. It is also striking that, while 'science' is quoted often, there is very little discussion of potential non-linear changes in the climate system, an issue to which I return below.

Second, corpus analysis provides strong evidence that the dominant framing used to discuss climate change is economic and technical. When compared with the BNC Spoken reference corpus, three main groups of words stood out as keywords, used significantly more frequently in the CCB Corpus. First, words directly related to the subject of the debate (*climate change, bill, target* . . .), which is not surprising. Second, words usually used in parliamentary debate (*member, gentleman, amendment* . . .), which again is to be expected. Third, economic or technical phrases, referring to climate impacts or mitigation measures: *economy, capture [relating to carbon capture], efficiency, low-carbon, reduction/reduce, trading, costs, CCS [carbon capture and storage], fuel, power stations, measures.* Looking in terms of semantic groupings, the groupings 'science and technology in general' and 'money: cost and price' are over-represented.

The dominance of economic and technical language is notable in comparison with other parliamentary speech, as is demonstrated by a comparison with the Budget Corpus. While parliamentary speech about the budget obviously contains a large number of economic words and phrases, so too does speech about the CCB. In particular, Table 3 shows that the words *costs* and *benefits* are actually used more than twice as often in the CCB Corpus than in the Budget Corpus, to describe the impacts of climate change or policies to mitigate climate change.

This evidence shows that politicians use scientific, economic and technical language in order to construct a credible case for action on climate change.

What is not discussed?

Politicians' tendency to use scientific and technical language to discuss climate change is further emphasised by an examination of what is left out. I show below that some significant categories of speech are underused in discussion of the CCB: environment and non-human species; and people and social groupings. There is also little discussion of potentially far-reaching or catastrophic climate events.

Table 3. Typical use of *costs* and *benefits* in CCB Corpus.

Typical use of *costs* and *benefits* in CCB Corpus		
early action considerably outweigh the	costs	and that if the investments are made
produce lower-bound estimates of the	costs	of carbon abatement in 2050
they say: Both short and long run	costs	could be unevenly distributed, with
what we propose to do, who will bear the	costs	and who will get the benefits
and to reap the potential economic	benefits	that are on offer
possible to calculate precisely the economic	benefits	or disbenefits of specific actions
the thing is that it puts the maximum	benefits	of the actions proposed in the Bill
couple of years, but then the technological	benefits	should kick in, albeit before the

Environment and non-human species: Politicians barely mention the environment, and rarely stress their commitment to environmental protection, in discussions on climate change. The words *environment* and *environmental*, although used more than in the BNC Spoken reference corpus, did not occur frequently, and when they did, their meaning was nuanced. *Environmental* is used only 53 times (compared with *economy*, used 97 times, or *trading*, used 72 times). But nearly half of these relate to the names of organisations, such as the Environmental Audit Committee, leaving only 29 true uses of the word. Of these, only 14 can be identified as seeing environmental protection as a necessary or desirable thing – examples are set out in Table 4.

There are a further five uses of the term *environmental* which carry a negative or uncertain connotation, such as: 'green taxes serve only to give the whole environmental agenda a bad name' (Hansard 9 June 2008 col 121) or 'must be supported by evidence of the environmental benefit' (Hansard 28 October 2008 col 815).

Neither is there much mention of non-human species. The semantic category 'living creatures: animals, birds, etc.' actually occurs less frequently in the CCB Corpus than in everyday speech (the BNC Spoken reference corpus).

People and social groupings: It is striking that politicians do not talk about people when discussing climate change. Ten out of the top 60 words that are underused in the CCB Corpus (i.e. used more often in standard spoken English than in the CCB Corpus) are words directly connected with people: *you; I; she; they; he; them; me; her; him; people*. When analysing semantic groupings rather than words, the same pattern emerges: significantly underused semantic groupings include 'pronouns' and 'kin'.

Parliamentary speech is, of course, different from standard informal speech, and this could account for the above findings. To investigate this, the CCB Corpus was compared with the Budget Corpus. A similar pattern emerged. Words that were significantly underused in the CCB Corpus compared to the Budget Corpus include: *families, child, children, pensioners, parents*. The semantic grouping 'kin' was used six times more frequently in the Budget speech. As shown in Table 5, 'kin' words in the Budget speech are used to talk about how the budget may affect different groupings, with a

Table 4. Typical use of 'environmental'.

Typical use of 'environmental' (14 occurrences)		
not address climate change: the massive	environmental	migration, the flooding in some areas
Darfur, reiterating the linkages between the	environmental	degradation caused by global warming
there tends to be a 30-year delay in the	environmental	impact of the damage that we do now
I accept that climate change is a serious	environmental	threat that requires action. We have to
budget is met, along with the 2050 target. In	environmental	terms, it does not matter where in the

particular focus on families. Speakers use 'kin' words to stress how they want to help people. However, in the CCB Corpus, usage is more abstract: the most common term is *household/s* rather than *family/ies* and the focus is on the household as a unit for policy, such as 'reducing emissions … at household level' (Hansard 28 October 2008 col 749).

Detailed reading of the text reveals that a notable exception to this is the rhetorical appeal to consider the future world which grandchildren will inhabit, as a way of talking about potential climate impacts: 'I am concerned about … my grandchildren and the world they live in' (Hansard 9 June 2008 col 105). While this is unequivocally a personal appeal, it still differs from the Budget speech, which is concerned with immediate impacts on people.

Economic and technical language also dominates the debate about responses to climate change. Significant collocates of the word *carbon* (words occurring together with the keyword *carbon*) include: *storage, capture, low, budget(s), credits, price, reduc(e)/ing/ion, economy*. If, as Baker *et al.* (2008) suggest, collocates provide the 'atmosphere' of the word, it is clear that carbon is discussed as a technical issue, not a social one. This reduces the range of potential responses under consideration, and leaves no room for discussion of the embedded, socially bound nature of climate change and the 'locked-in high carbon legacy' (Urry 2011, p. 65) of social practices.

In short, it appears from this analysis that politicians do not discuss the human element of the climate problem, or solution, perhaps feeling that a more emotional, people-based narrative would be discredited – despite the widespread tendency of politicians to appeal to personal narratives and 'human interest'.

Abrupt or irreversible impacts: Lastly, there is very little discussion about abrupt or irreversible impacts of climate change, sometimes called 'tipping

Table 5. Typical use of words within semantic grouping 'kin' in CCB Corpus and Budget Corpus.

Typical use of words within semantic grouping 'kin' in CCB Corpus and Budget Corpus		
CCB Corpus (28 occurrences in 97k words)		
incentive schemes, designed to encourage	households	to minimise and recycle their waste
impact of this Bill on the costs of ordinary	households	to play their part
the world that they live in, and about my	grandchildren	and the world they live in
billion would equal over 10,000 from every	family	in every constituency
balance of reducing emissions, not only at	household	level but between different sectors
Budget Corpus (85 occurrences in 50k words)		
economy now and help businesses and	families	I will postpone that increase
many lives. Central to that is helping more	parents	into work. We want to demonstrate
for first-time buyers and lower-income	families	and this will help more people
one such constituent is 106 and her	husband	died 40 years ago
about charging 30,000 per member of a	household	. I am pretty sure concerns

points' or 'threshold events'. Although the possibility of such impacts was discussed in the previous year's IPCC (2007) and the Stern Review listed 'abrupt and large-scale impacts' (Stern 2007, p. 66), these are barely mentioned by politicians.

In the Parliamentary debate, there are only three mentions of these words or phrases (*tipping point/threshold (event)/abrupt/irreversible*). In presenting the Bill, the Environment Minister Phil Woolas speaks of 'a real risk of reaching the point at which abrupt or irreversible climate change happens' (Hansard 9 June 2008 col 37). *Tipping point* is used twice, but one of these uses is sceptical that tipping points are likely, despite the scientific consensus to the contrary. The MP in question states that 'the only argument for acting radically now is if there is a tipping point – a point of no return. None of the scientists whom I have read predicts that' (Hansard 9 June 2008 col 105). The word *threshold* is not used at all in this context.

Conclusion: taming the climate?

Corpus analysis of politicians' discussion of the 2008 Climate Change Act reveals a clear tendency on the part of politicians to 'tame' climate change, presenting it as a technical issue, amenable to straightforward policy action. This is evident both in how climate change is presented, and in what is left out. Climate change is presented through strongly scientific, technical and economic language. There is little or no discussion of people, other species or the environment; neither are climate issues seen as social issues. Politicians' use of science is also highly selective, with little discussion of abrupt or irreversible impacts, in contrast to both the scientific consensus and the Stern Review (IPCC 2007, Stern 2007).

Below I evaluate the use of corpus analysis as a methodological approach, before discussing the wider implications of the findings.

Evaluating corpus analysis for the study of politics

This study, as well as previous studies of different issues (Baker 2004, Perren and Dannreuther 2013), has shown the value of corpus analysis in providing empirical evidence of patterns of political discourse. Corpus techniques complement standard textual analysis, allowing researchers to identify particularities of language use. The main limitation of corpus analysis of Hansard is that it investigates how politicians present climate change in the public domain. Anonymised interviews with politicians would help to uncover the thinking behind the words, and examine the extent to which framings are conscious choices.

There are number of ways in which the method could be extended. It could be used to compare different discourses between political parties, or to examine how the language used to discuss an issue like climate alters over time, or between parliamentary settings: Is the language used by Select Committees, for example, significantly different? Comparison could also be made with policy proposals, such as White Papers or Reviews, to investigate how political framing of an issue influences subsequent discussions of policy.

This study examines a particular, and consensual, moment of climate politics in the UK; a comparison with, say, 2015 would be instructive, given threats to this consensus following the economic downturn (Skovgaard 2014, Carter and Clements 2015). The discourse of politicians could also be compared with language used by other groups, such as campaign groups or business groupings, to evidence different framings of an issue.

Taming the climate? Implications for policy and practice

This study shows that, rather than adjusting their worldview to accommodate the far-reaching implications of climate change, politicians instead attempt to adjust or tame climate change to fit into existing worldviews. This may be a well-meaning attempt to frame a difficult, complex issue into something amenable to the political agenda. Thus politicians who want to make progress on the issue present it as a relatively unthreatening, manageable problem. It may be that they face a tactical choice: to do this or not to discuss the issue at all. The only way that politicians can create a 'policy window', to use Kingdon's (1995) phrase, is to define the problem relatively narrowly, and present solutions that they believe will attract a viable level of support and maintain a consensus.

If, as this research suggests, politicians do indeed define climate change in a relatively narrow way, it would explain why, following Latour (2007) and Marres (2005), the issue called 'climate change' discussed outside Parliament is differently constituted from the one discussed inside Parliament. Outside Parliament, amongst activist groups, for example, or at international climate negotiations, the issue can be given free rein and the full political implications discussed; within the Palace of Westminster it is constrained into 'un-politics' (Crenson 1971) in order to be discussed at all.

There may also be a more profound reason for politicians' reluctance to discuss the more far-reaching implications of climate change. Politics, and indeed human society, has developed during a time of remarkable planetary stability. Anthropogenic changes threaten this stability, and call into question the continuation of the benign climatic conditions that have

underpinned our social life on this planet (Clark 2011). A full response to climate change would require discussion of this very fact, that a stable climate is a prerequisite for our political and social systems – what Donna Haraway calls 'a denormalisation of that which is normally held still' (Haraway 2014), or what Sarah Whatmore calls the ontological politics of 'posthumanism', a project 'that insists on the co-evolutionary embodiment and embeddedness of the human animal within the world' (Whatmore 2013, p. 34).

When confronted with an existential challenge on this scale, it is not surprising that politicians craft a more manageable conception of the problem. Yet the obvious caveat is that wishing climate change to be more manageable will not make it so. Framing climate change in this way may make it possible to address in Parliament, but it means that the full implications are ignored.

The evidence of this study suggests that it is very difficult for politicians to address climate change comprehensively within a formal Parliamentary setting, however necessary it may be to do so. Opening up debate within Parliament could be achieved through using different discussion spaces or types of debate, such as a 'national convention' on climate, and by encouraging robust engagement between politicians and climate advocates outside Parliament. A more explicit articulation of power relations and vested interests, which influence political framings of the issue (Oreskes and Conway 2012, Phelan *et al.* 2012, Geels 2014), could also help. The fossil-fuel divestment movement, now gaining considerable traction, is one example of this. Such initiatives could allow politicians to debate fully the implications of climate change, and build support for a more comprehensive political and social response.

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References

Bachrach, P. and Baratz, M.S., 1962. Two Faces of Power. *The American Political Science Review*, 56 (4), 947–952. doi:10.2307/1952796

Baker, P., 2004. "Unnatural Acts": discourses of homosexuality within the House of Lords debates on gay male law reform. *Journal of Sociolinguistics*, 8 (1), 88–106. doi:10.1111/j.1467-9841.2004.00252.x

Baker, P., *et al*. 2008. A useful methodological synergy? Combining critical discourse analysis and corpus linguistics to examine discourses of refugees and asylum seekers in the UK press. *Discourse Society*, 19 (3), 273–306. doi:10.1177/0957926508088962

Baker, P. and Levon, E., 2015. Picking the right cherries? A comparison of corpus-based and qualitative analyses of news articles about masculinity. *Discourse & Communication*, 9 (2), 221–236. doi:10.1177/1750481314568542

Beck, U., 2006. Living in the world risk society. *Economy and Society*, 35 (3), 329–345. doi:10.1080/03085140600844902

Benford, R.D. and Snow, D.A., 2000. Framing Processes and Social Movements: an Overview and Assessment. *Annual Review of Sociology*, 26, 611–639. doi:10.1146/annurev.soc.26.1.611

Biermann, F., *et al*. 2012. Transforming governance and institutions for global sustainability: key insights from the Earth System Governance Project. *Current Opinion in Environmental Sustainability*, 4 (1), 51–60. doi:10.1016/j.cosust.2012.01.014

British National Corpus, 2008. BNC Sampler: XML edition. Available from http://www.natcorp.ox.ac.uk/

Caldas-Coulthard, C.R. and Moon, R., 2010. "Curvy, hunky, kinky": using corpora as tools for critical analysis. *Discourse & Society*, 21 (2), 99–133. doi:10.1177/0957926509353843

Carter, N., 2014. The politics of climate change in the UK. *Wires Climate Change*, 5 (3), 423–433. doi:10.1002/wcc.274

Carter, N. and Clements, B., 2015. From "greenest government ever" to "get rid of all the green crap": David Cameron, the Conservatives and the environment. *British Politics*, 10 (2), 204–225. doi:10.1057/bp.2015.16

Carter, N. and Jacobs, M., 2014. Explaining Radical Policy Change: the Case of Climate Change and Energy Policy Under the British Labour Government 2006–10. *Public Administration*, 92 (1), 125–141. doi:10.1111/padm.2014.92.issue-1

Clark, N., 2011. *Inhuman nature: sociable life on a dynamic planet*. Los Angeles; London: SAGE.

Cobb, R.W. and Coughlin, J.F., 1998. Are elderly drivers a road hazard?: problem definition and political impact. *Journal of Aging Studies*, 12 (4), 411–427. doi:10.1016/S0890-4065(98)90027-5

Crenson, M.A., 1971. *The un-politics of air pollution; a study of non-decisionmaking in the cities*. Baltimore: Johns Hopkins Press.

Dalby, S., 2013. The geopolitics of climate change. *Political Geography*, 37, 38–47. doi:10.1016/j.polgeo.2013.09.004

Dayrell, C. and Urry, J., 2015. Mediating climate politics the surprising case of Brazil. *European Journal of Social Theory*, 18 (3), 257–273. doi:10.1177/1368431015579962

Demeritt, D., 2001. The Construction of Global Warming and the Politics of Science. *Annals of the Association of American Geographers*, 91 (2), 307–337. doi:10.1111/0004-5608.00245

Downs, A., 1972. Up and Down with Ecology - the "Issue-Attention Cycle." *Public Interest*, 28, 38–51.

Dryzek, J.S., 2014. Institutions for the Anthropocene: governance in a Changing Earth System. *British Journal of Political Science Firstview*, 46 (4), 1–20.

Fairclough, N., 2000. *New labour, new language?*. New York: Routledge.

Fielding, K.S., *et al.* 2012. Australian politicians' beliefs about climate change: political partisanship and political ideology. *Environmental Politics*, 21 (5), 712–733. doi:10.1080/09644016.2012.698887

Fløttum, K., *et al.* 2014. Representations of the future in English language blogs on climate change. *Global Environmental Change*, 29, 213–222. doi:10.1016/j.gloenvcha.2014.10.005

Geels, F.W., 2014. Regime resistance against low-carbon transitions: introducing politics and power into the multi-level perspective. *Theory, Culture & Society*, 31 (5), 21–40. doi:10.1177/0263276414531627

Giddens, A., 2009. *The politics of climate change*. Cambridge: Polity.

Hajer, M., *et al.* 2015. Beyond Cockpit-ism: four Insights to Enhance the Transformative Potential of the Sustainable Development Goals. *Sustainability*, 7 (2), 1651–1660. doi:10.3390/su7021651

Hajer, M.A., 2000. *The politics of environmental discourse: ecological modernization and the policy process*. Oxford: Clarendon Press.

Hajer, M.A. and Forester, J., 1993. Discourse coalitions and the institutionalisation of practice: the case of air pollution. In: F. Fisher and J. Forester, eds. *The argumentative turn in policy analysis and planning*. Durham, N.C.: *Duke* University Press, 43–76.

Haraway, D.J., 2014. Anthropocene, capitalocene, chthulucene: staying with the trouble. *Open Transcripts [Online]*. Available from http://opentranscripts.org/transcript/anthropocene-capitalocene-chthulucene/[accessed 24 November 2016]

Hulme, M., 2009. *Why we disagree about climate change: understanding controversy, inaction and opportunity*. Cambridge: Cambridge University Press.

IPCC, 2007. *Climate Change 2007: synthesisReport*. Geneva: Intergovernmental Panel on Climate Change.

IPCC, 2014. *Climate change 2013: the physical science basis: Working Group I contribution to the Fifth assessment report of the Intergovernmental Panel on Climate Change*. New York : Cambridge University Press.

Jackson, T., 2005. Motivating sustainable consumption: a review of evidence on consumer behaviour and behavioural change. Sustainable development research network [online]. Available from: http://research.fit.edu/sealevelriselibrary/docu

ments/doc_mgr/922/Jackson.%202005.%20Motivating%20Sustainable%
20Consumption.pdf [Accessed 24 Nov 2016].

Johnson, E., *et al.* 2014. After the anthropocene politics and geographic inquiry for a new epoch. *Progress in Human Geography*, 38 (3), 439–456. doi:10.1177/0309132513517065

Kingdon, J.W., 1995. *Agendas, alternatives, and public policies*. 2nd ed. New York: Longman.

Latour, B., 2007. Turning around politics a note on Gerard de Vries' paper. *Social Studies of Science*, 37, 811–820. doi:10.1177/0306312707081222

Latour, B., 2014. Agency at the Time of the Anthropocene. *New Literary History*, 45 (1), 1–18. doi:10.1353/nlh.2014.0003

Lövbrand, E., Stripple, J., and Wiman, B., 2009. Earth system governmentality: reflections on science in the anthropocene. *Global Environmental Change*, 19 (1), 7–13. doi:10.1016/j.gloenvcha.2008.10.002

Marres, N., 2005. *No Issue, No Public: democratic deficits after the displacement of politics*. Thesis (PhD). Universiteit van Amsterdam.

McNeil, M., 2013. Between a Rock and a Hard Place: the Deficit Model, the Diffusion Model and Publics in STS. *Science as Culture*, 22 (4), 589–608. doi:10.1080/14636778.2013.764068

Mitchell, T., 2011. *Carbon democracy: political power in the age of oil*. London: Verso.

Molin, S., 2007. The Hansard hazard: gauging the accuracy of British parliamentary transcripts. *Corpora*, 2 (2), 187–210. doi:10.3366/cor.2007.2.2.187

Ophuls, W., 1992. *Ecology and the politics of scarcity revisited: the unraveling of the American dream*. New York: W.H. Freeman.

Oreskes, N. and Conway, E.M., 2012. *Merchants of doubt: how a handful of scientists obscured the truth on issues from tobacco smoke to global warming*. London: Bloomsbury.

Partington, A., 2012. Corpus analysis of political language. In C. Chapelle, ed. *The encyclopaedia of applied linguistics*. Blackwell, Oxford.

Perren, L. and Dannreuther, C., 2013. Political signification of the entrepreneur: temporal analysis of constructs, agency and reification. *International Small Business Journal*, 31 (6), 603–628. doi:10.1177/0266242612441809

Phelan, L., Henderson-Sellers, A., and Taplin, R., 2012. The Political Economy of Addressing the Climate Crisis in the Earth System: undermining Perverse Resilience. *New Political Economy*, 18 (2), 198–226. doi:10.1080/13563467.2012.678820

Rayson, P., 2008. From key words to key semantic domains. *International Journal of Corpus Linguistics*, 13 (4), 519–549. doi:10.1075/ijcl.13.4

Rickards, L., Wiseman, J., and Kashima, Y., 2014. Barriers to effective climate change mitigation: the case of senior government and business decision makers. *Wires: Climate Change*, 5 (6), 753–773.

Sinclair, J., Ed. 1994. *Collins COBUILD English language dictionary*. London: Collins.

Sinclair, J., 2005. Corpus and text: basic Principles. In: M. Wynne, ed. *Developing linguistic corpora: a guide to good practice*. Oxford: Oxbow Books, 1–16.

Skovgaard, J., 2014. EU climate policy after the crisis. *Environmental Politics*, 23 (1), 1–17. doi:10.1080/09644016.2013.818304

Solecki, W.D. and Shelley, F.M., 1996. Pollution, political agendas, and policy windows: environmental policy on the eve of Silent Spring. *Environment and Planning C: Government and Policy*, 14 (4), 451–468. doi:10.1068/c140451

Steffen, W., *et al.* 2011. The Anthropocene: from Global Change to Planetary Stewardship. *Ambio*, 40 (7), 739–761. doi:10.1007/s13280-011-0185-x

Stern, N.H., Ed. 2007. *The economics of climate change: the Stern review*. Cambridge: Cambridge University Press.

Swyngedouw, E., 2010. Apocalypse Forever? Post-political Populism and the Spectre of Climate Change. *Theory Culture Society*, 27 (2), 213–232. doi:10.1177/0263276409358728

Urry, J., 2011. *Climate change and society*. Cambridge, U.K: Polity Press.

Weiss, G. and Wodak, R., 2002. *Critical discourse analysis theory and interdisciplinarity*. London: Palgrave Macmillan.

Whatmore, S.J., 2013. Earthly Powers and Affective Environments: an Ontological Politics of Flood Risk. *Theory, Culture & Society*, 30 (7–8), 33–50. doi:10.1177/0263276413480949

Wild, K., *et al.* 2013. Quantifying lexical usage: vocabulary pertaining to ecosystems and the environment. *Corpora*, 8 (1), 53–79. doi:10.3366/cor.2013.0034

Wodak, R. and Fairclough, N., 1997. Critical discourse analysis. In: T. Deuk, ed. *Discourse as social interaction*, 258–284. London: Sage.

Wright, C., Nyberg, D., and Grant, D., 2012. "Hippies on the third floor": climate change, narrative identity and the micro-politics of corporate environmentalism. *Organization Studies*, 33 (11), 1451–1475. doi:10.1177/0170840612463316

Wynne, B., 1996. May the sheep safely graze? a reflexive view of the expert-lay knowledge divide. In: S. Lash, B. Szerszynski, and B. Wynne, eds. *Risk, environment and modernity: towards a new ecology*. London: Sage.

Wynne, M., Ed., 2005. *Developing linguistic corpora: a guide to good practice*. Oxford: Oxbow Books.

Paper 2

How Members of Parliament Understand and Respond to Climate Change

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How Members of Parliament understand and respond to climate change

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Abstract

Action on climate change, to meet the targets set in the 2015 Paris Agreement, requires strong political support at the national level. Whilst the political and governance challenges of climate change have been discussed at length, there is little understanding of how politicians, as influential individuals within the political system, understand or respond to climate change. This article presents findings from 14 qualitative interviews with Members of the UK Parliament, to discuss how politicians conceptualise climate change, and their deliberations on whether or how to act on the issue. First, it reviews an interdisciplinary literature from sociology, political theory and science and technology studies, to investigate how politicians navigate their work and life. Second, it presents 'composite narratives' to provide four different MPs' stories. Last, it draws conclusions and implications for practice. It highlights three crucial factors: *identity*, or how politicians consider the climate issue in the context of their professional identity and the cultural norms of their workplace; *representation*, how politicians assess their role as a representative, and whether proposed political action on climate is seen as compatible with this representative function; and *working practices*, how day-to-day work rituals and pressures influence the aims, ambitions and engagement of politicians with climate change.

Keywords

climate change, composite narratives, identity, interviews, Parliament, politicians, representation, UK

Introduction

In a recent media interview, the British artist Antony Gormley said that he despaired of politicians' inability to act on climate change. 'They are just not capable of long-term thinking', he said. 'We are sleepwalking into a massive human disaster' (quoted in Brown,

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2015). Gormley is not alone in expressing these frustrations. Groups as diverse as Friends of the Earth, the OECD and the World Economic Forum have been critical of legislators' timidity on climate change (Bawden, 2015; Brown, 2015; Camberlain, 2013; Gurría, 2008). Are they right to lay the blame at the door of Parliament, and specifically, on the action, or inaction, of politicians?

Whilst the politics and governance of climate change have been much discussed across both sociology and political science (e.g. Biermann et al., 2012; Eckersley, 2004; Giddens, 2009; Johnson et al., 2014; Latour, 2014; Urry, 2011), there has been very little research directed at understanding how politicians understand and act upon the issue. A recent comprehensive review found no research into the views, values and motivations of practising politicians on these issues (Rickards, Wiseman, & Kashima, 2014). Yet elected politicians have crucial powers and responsibilities. Action by governments and parliaments is dependent upon politicians (amongst others) articulating a case, navigating conflicting interests and proposing responses.

This article presents research exploring how politicians understand their role, and how they deliberate on an issue as complex as climate change. It starts from the assumption that climate change is a social and political issue, 'something that cannot be solved through a reliance on science and technology alone' (Carter & Charles, 2009, p. 15). Thus sociological analysis is, as Urry writes, 'central to examining high carbon societies and climate change' (2009, p. 84).

The research takes a similar approach to studies investigating public attitudes and motivations, such as Laidley's (2013) study of class differences in responding to climate change, Horton's (2003) account of the identity work of environmental activists, and Norgaard's (2006) investigation of climate understandings in a Norwegian village. The aim is not to supplant the more macro, structural accounts of climate governance and politics, but to enrich them through enhanced understanding of the motivations and outlooks of politicians – as crucial agents within this structure. In doing so, the research can improve practice, through helping scientists, policymakers and third-sector advocates understand the political domain, and collaborate with politicians to develop workable strategies.

The article begins with a discussion of the role played by national parliaments in climate action, following the 2015 Paris Agreement. Previous work from sociology, political theory and science and technology studies, which helps to explain politicians' motivations and outlooks, is then reviewed. The methodological approach is set out, and in particular, the use of narrative interviews. Findings are presented through four 'composite narratives', blended from 14 interviews, telling four stories about how politicians navigate their working life in general, and climate issues in particular. Finally, conclusions and implications for practice are drawn.

Governing the climate: From a global agreement to individual politicians

The Paris Agreement on Climate Change of December 2015 was unprecedented. A record 195 countries agreed that 'climate change represents an urgent and potentially irreversible threat to human societies and the planet … deep reductions in global emissions will be required' (United Nations Framework Convention on Climate Change

[UNFCCC], 2015, p. 1). Whilst providing a framework for international cooperation, under the Agreement, each state is responsible for developing its own plan, called a 'nationally determined contribution', to contribute to the overall goal of limiting climate change to between 1.5°C and 2°C rise in global average temperature. Following Paris, therefore, attention has shifted to the level of the nation-state, and the process of drawing up strategies compatible with the Paris Agreement.

The UK already has statutory targets on carbon reduction, enshrined in the 2008 Climate Change Act. This Act sets five-yearly carbon budgets, leading to an 80% reduction in emissions from 1997 levels by 2050, overseen by the independent Committee on Climate Change. However, the means by which this goal will be reached are not clear. Targets need to be met through policies and action to reduce emissions in energy, transport, buildings and land use, for example. The Committee recently criticised government for a so-called 'policy gap' (Committee on Climate Change, 2016, p. 3), saying that further policies are required if the targets are to be met. Responsibility for meeting the targets lies with Parliament, an institution consisting of 650 individual MPs, working within a context of established and evolving norms, procedures and rituals (Lovenduski, 2012).

The life and work of a parliamentarian

Though there is little research into the specific question of politicians' treatment of climate change, previous work offers insights into how politicians and others understand their role and navigate their working life. Below, three different approaches to this question are briefly reviewed: first, sociological investigations of Parliament, looking at questions of identity in particular; second, research from political theory examining the representative role of politicians; and third, work from science and technology studies on the day-to-day working practices of individuals within institutions.

Identity: The social world of politicians

The ways in which individual outlooks and actions are conditioned by social and cultural contexts have long been studied by sociologists of identity (for a review see Lawler, 2014). Studies on gender in the House of Commons (Lovenduski, 2012; Malley, 2012; McKay, 2011; Puwar, 2004) demonstrate that the norms and rituals of Parliament condition and constrain action. New institutionalist thinkers refer to this as a 'logic of appropriateness' (Chappell, 2006, p. 223). Institutions like Parliament should be seen, they argue, as 'collections of interrelated rules and routines that define appropriate actions. … When individuals enter an institution, they try to discover, and are taught, the rules' (Chappell, 2006, p. 161; see also Douglas, 1986; Lewis & Steinmo, 2012).

In a similar vein, Puwar (2004) draws on the work of Bourdieu in a study of female and ethnic minority politicians. Puwar argues that there are strong, yet implicit, norms governing life in the House of Commons. The 'habitus' or life-world of politicians, she argues, is implicitly gendered and racialised, yet white male politicians feel themselves to be neutral or unmarked. Puwar writes that 'there is a behavioural male norm and women are under assimilative pressures to conform to that norm' (1997, p. 100).

If politicians reject these norms, they risk damaging their social capital. Puwar stresses the importance of social capital – forging links with others who provide support and endorsement. She describes 'circles, competing and overlapping, of mutual admiration. … The higher you rise, the more you are party to the mechanisms of affirmation' (1997, p. 120). Caroline Lucas's (2015) account of entering Parliament as the sole Green Party MP is striking, in that the isolation Lucas feels is not just political, but personal and social too.

From this research, it is clear that, to investigate how politicians understand climate change, it is necessary to study individuals' implicit or explicit 'identity work', and the dynamics between individuals and organisations.

Representation

For politicians, however, it is not just the relationship between the individual and the organisation that matters. Politicians are also representatives, with relationships and responsibilities that go beyond the immediate confines of their institution. The relationship between the representative and those they represent is complex, and the subject of much debate in political theory, from the Ancient Greeks through to Rousseau and beyond (Dobson & Hamilton, 2016; Mansbridge, 2003; Urbinati & Warren, 2008). Recent work by Michael Saward conceptualises representation not as a static fact, but as a dynamic relationship between representatives and represented. Under this formulation, the representative makes a claim to representation, which can be accepted or rejected by constituents. Saward writes that representatives:

> … make claims about themselves and their constituents and the links between the two; they argue or imply that they are the best representatives of the constituency. … They may well be 'agents', as representatives are conventionally understood, but equally or more importantly they are 'actors', makers of claims. (Saward, 2006, p. 302)

The conception of representation as a negotiated claim links back to the first factor discussed above: that of identity. In this light, a crucial part of a politician's identity is the constant affirming and reaffirming of a representative claim, in order to show colleagues and publics alike that they are carrying out their role appropriately. Thus politicians speaking and acting on climate change must construct a 'representative claim' to justify their proposed actions, and to show why and how they are in the interests of the represented.

Working practices

It is not just abstract concepts of identity and representation which govern the working life of politicians. A third factor is the constraint placed upon them by the day-to-day practice of politics.

Ethnographies of Parliament and government (Crewe, 2015; Rhodes, 2011) show that politicians spend their days in a fast-paced blur of meetings, actions and reactions. Work in science and technology studies demonstrates that everyday practices, whether in a

laboratory or in Parliament, have a strong influence over the definitions of aims or ambitions (Latour, 1987). Fujimura's (1987) ethnography of scientists in a cancer laboratory reveals that scientists must constantly work to 'achieve alignment' between the day-to-day tasks they carry out, the wider environment of the laboratory, and the expectations of colleagues, sponsors and other actors. Whilst scientists state their aims in terms of the scientific breakthrough they are trying to achieve, these aims are constantly adapted and negotiated in the light of day-to-day pressures and constraints. Fujimura argues that, through this process of 'tinkering', aims and ambitions get remoulded into 'do-able problems', manageable within the confines of their institutional setting.

Applying this analysis to Parliament, the day-to-day working life of politicians should be expected to influence their broader aims and ambitions. Analysis of political speech on climate change (Willis, 2017) demonstrates that politicians attempt to 'tame' climate change, presenting it as a more manageable issue than may be the case. It is thus essential to develop an understanding of what politicians regard as 'realistic'. Do politicians craft 'do-able problems' for themselves, and by doing so, effectively rule out 'un-do-able problems', which are too big, too complex or too different?

Developing an understanding of politicians' deliberations on climate

These insights suggest that the ways in which politicians respond to climate change are complex and situated, influenced by social norms and political understandings. When politicians assess climate change, it is not simply a case of taking evidence and 'translating' it into appropriate governance mechanisms. Scholars of science and technology studies have long criticised the notion that science can be straightforwardly 'translated' (Wynne, 2010). Instead, the challenge is to understand the 'complex ways in which the construction of stable knowledge interpenetrates with the formation of core elements that stabilize society: identities, institutions, discourses and representations, among others' (Jasanoff, 2010, p. 236). The aim of the research presented here, then, is to examine how politicians understand 'climate change', as a scientific, social and political phenomenon; and how this influences the way in which policies are developed and implemented.

Methodology

The aim of this study, as described above, is to supplement accounts of climate politics and governance with a deeper understanding of a crucial set of people in this debate: politicians. Thus the interviews were designed to elicit personal stories, drawing on Riessman's (2008) narrative method, in which participants are encouraged to tell the story of their work and life. The narratives that interviewees choose, the language and style they use, and the way that they conduct themselves are all significant. As Riessman writes in describing narrative research, 'narratives do not mirror, they refract the past … narratives are useful in research precisely because storytellers interpret the past rather than reproduce it as it was' (2005, p. 6).

The interviews were explicitly presented as collaborative, a joint investigation by the researcher and the researched (Morris, 2009; Oakley, 1988). As the interviewer, I was already known to most of the interviewees, having worked with the think tank Green

Table 1. Interviewees' background and experience.

Gender	9 male, 5 female (reflecting gender balance of Parliament as a whole)
Party affiliation	6 Conservative, 6 Labour, 2 Liberal Democrat
Time served as MP	Between 1 and 19 years' work as an MP; mean = 6.4 years
Current status	8 sitting MPs; 6 former MPs, who left office in 2010 or 2015
Seniority	4 interviewees had served in government; 2 had served on the opposition frontbench; 8 were backbenchers, most with experience on Select Committees
Record on climate change issues	7 with some record of activity on climate change issues (judged through speeches in Westminster and elsewhere); 7 with little or no activity

Note: Participants were not asked for additional demographic data, e.g. age or ethnicity.

Alliance, running workshops for MPs to discuss issues of environmental strategy. I did not present myself as an impartial academic, but as an enquirer and collaborator. Interviewees understood that one of the purposes of the study is to find ways to better support politicians in their work on climate change.

Research process

MPs from three political parties in the UK House of Commons, Labour, Conservative and Liberal Democrat, were interviewed between February and June 2016. The interviews took place just after the conclusion of the Paris Agreement on Climate Change; this was mentioned by some interviewees. All interviews took place before the EU Referendum on 23 June, though the referendum campaign provided a backdrop for discussions. MPs were recruited through an invitation setting out the collaborative nature of the project, as a joint initiative between Lancaster University and Green Alliance. Twenty-two MPs were approached, to secure the 14 interviews. Participants were selected to provide a balance of age, gender, political party, seniority and length of time served as an MP (see Table 1).

Participants' previous involvement in the issue of climate change was investigated. There was a wide spectrum of involvement, as evidenced by participation in events or speeches. Known 'climate sceptic' MPs (defined as those who publicly state that they do not accept the scientific consensus, as represented by the Intergovernmental Panel on Climate Change [IPCC, 2014]) were not approached. This is because the research question focuses on how MPs try to understand and act on climate change, rather than examining the reasons for rejecting the issue altogether. Although this is an interesting and important question, a different research strategy would be needed for this group. Though climate sceptics are influential, they are small in number, with only five MPs out of 650 voting against the Climate Change Act in 2008.

Interviews were semi-structured, and designed to be informal, with a focus on eliciting narrative from the participant. In the first part of the interview, I asked participants to reflect on the way that they work, including what issues they work on and why; and the influences and pressures upon them. I then asked questions specifically on climate

change: the extent to which the issue is discussed in Parliament and how it is discussed; and whether and how they work on the issue. This basic framework was used for all interviews, though, in the spirit of narrative research (Riessman, 2008), the interview was conducted as a conversation, and emphasis varied. Whilst the interviews were certainly collaborative, I challenged interviewees when I felt that this would aid reflection. Interviews were audio recorded and transcribed by the researcher. Ethical protocols, anonymity and consent were discussed with each participant.

Analysis and presentation of data: The use of composite narratives

Interview data were transcribed and analysed through coding using NVivo software, and through critical reading of the scripts. The overall picture thrown out by the interview data was both more tangled and richer than anticipated. 'Standard' categories, such as party affiliation, social background, gender, age and previous experience all played a part, as expected from previous research (see, for example, Carter [2013] on party strategies, and research described earlier [e.g. McKay, 2011; Puwar, 2004] on gender). However, the picture that emerged did not show clear-cut distinctions along these lines, but a complex web of influences, moralities, strategies, assumptions and practicalities. Each individual could be seen to navigate their working life within this web, and, whereas each web was unique, some considerations were common to all – such as the issue of how each politician understands their role as a representative, as discussed below.

Thus the interviews presented a methodological challenge: how to do justice to the complexities of individual motivations and outlooks, whilst drawing out more generalised learning and understanding; or, in the words of STS scholar John Law, how to deal with 'mess', and finding ways 'to keep the metaphors of reality-making open, rather than allowing a small subset of them to neutralise themselves and die in a closed, singular, and passive version of out-thereness' (Law, 2004, p. 139).

Above all, the data asked for a form of presentation that conveyed the richness of each individual interviewee's account. Yet this posed a further challenge: that of anonymity. All participants spoke anonymously, and this was crucial in building a clear picture of their private deliberations. In this context, assuring anonymity requires a more robust approach than just changing names (Saunders, Kitzinger, & Kitzinger, 2015; Tolich, 2004). Politicians, as public figures, are identifiable through a combination of factors such as age, time in office, constituency, party affiliation, professional or family background and so on.

These two considerations: first, the need to convey the richness and complexity of individual accounts; and second, the need to ensure anonymity, led to the decision to present the data as a series of 'composite narratives'. Using this approach, several individual interviews are combined to tell a single story. This approach, though rare, has been used when researching complex issues when anonymity is crucial, such as Piper and Sikes's (2010) study of teacher–pupil relationships.

Four composites were created from the data: 'David', a relatively new MP, who speaks regularly on the need to address climate change; 'Jonathan', also new to Parliament, who is less confident about speaking out; 'Paul', a more experienced politician with a frontbench role, who tries to find strategies to work on climate issues that

resonate with his colleagues and constituents; and 'Stephanie', a veteran ex-minister, who is concerned with the practicalities of achieving political and legislative change.

These accounts are stories, not fictions (Smart, 2010), in that each description is based solely on interview data, and all quotations come directly from interviews. The only modification is to present data from several interviews as if it were from a single individual. The stories mix interviewees from both genders, though in order to tell the story straightforwardly, a gender has been assigned to each narrative – one female, three male, roughly representing the gender split of the Commons (71% male). Party affiliations have not been ascribed to each story. As discussed above, political outlook is crucial to each politician's strategy and motivation, but the data did not reveal clear-cut distinctions along party lines. At the beginning of each narrative is a short description of the interviews that the composite is based on.

The interview data could, of course, have been combined in different ways, to create different composites. Indeed, different combinations were considered and explored. The final composites were chosen as they were felt to convey the range of views and positions revealed by the data, and to provide contrasting accounts of outlook and strategy. To borrow from John Law again, the aim is a 'complex and performative sense of social inquiry' in which 'methods are never innocent … they enact whatever it is they describe *into* reality' (Law & Urry, 2004: 403).

Deliberating on climate change: Four stories

David

'David' is a composite of three interviewees, one Labour, one Conservative and one Liberal Democrat, with a mean of 3.7 years in office. One interviewee had recently taken a role as a spokesperson for their party, the other two were backbenchers.

David has been in Parliament six years. He is a backbencher, and sits on a Select Committee. He is forthright, and a champion of climate issues. He points out to me that where we're sitting, in the House of Commons beside the River Thames, may well be under water in a few decades' time. He calls climate change 'catastrophic', and thinks that might be why some of his colleagues don't want to talk about it:

> I think the majority of MPs recognise that climate change is manmade, is happening and is going to have catastrophic consequences, but it's so scary in some ways, maybe they don't want to think about it. It's just such a big issue.

David tries to speak about climate change at every opportunity, both in Parliament and in his constituency. He asks questions about climate issues in debates; he puts forward amendments which alter legislation in support of climate action; and he goes to meetings hosted by environmental groups.

David feels that his commitment has come at a price. Like every MP I speak to, he says that climate change is not discussed much in the Commons. He thinks his colleagues see him as a 'freak', and that speaking out on climate is a 'career-limiting move'. Though he doesn't set out to be difficult, and would like to be promoted, it is important to him to

speak up for what he believes in. However, he thinks about how to present issues in ways that might appeal: 'I'm happy to use an economic argument if that means that more people will come on side. … I change the language to be much, much less extreme.'

As a relatively new MP, David says he needs to focus a lot of his attention on his constituency. He feels a responsibility to the people he represents, and wants to stand up for his local area. This takes up a lot of his time. Like nearly all the MPs I interview, he says that people don't ask him about climate change. 'I've knocked on thousands of doors, and had thousands of conversations with voters, and I just don't have conversations on climate change.' Nevertheless, he says, 'I do feel I have a mandate to act on it', and finds ways to talk about it. He uses speeches in his constituency to 'highlight the things that I care about', including climate change. He works with local environment groups, like Friends of the Earth and Greenpeace, though he is critical about how strident they are. They are like the Englishman abroad, he says; 'If you don't understand me, I'll shout louder.'

He thinks much discussion of climate change is too abstract and distant from voters: 'They've never been to Bangladesh, they've never met a polar bear … they're like, "yeah, ok, whatever".' Instead, he tries to make a case for low-carbon jobs, preventing floods and so on, building climate change into the discussions as he goes.

Despite his commitment to the issue, David says it is important to be realistic about what can be achieved:

> Politicians like to have campaigns that they can win. Then they can do that press release: 'I campaigned for x, and I got x, and I've delivered for you.' And you can't say 'I've campaigned to stop climate change. And now climate change is fixed, and I've delivered for you.' It's never going to be a press release that anyone's going to put out.

Jonathan

'Jonathan' is a composite of three interviewees, one Labour, two Conservative. Two had served one year as an MP; one had six years' experience. One had a role as a spokesperson for their party; the other two were backbenchers.

Jonathan is new to Parliament. Elected a year ago in a marginal seat, he feels that his position is precarious. He is just starting to find his way around the Commons, saying that 'there isn't really any training in being an MP'. He comments that the working ethos is 'totally individualistic, not collegiate', with each MP having to steer their own way through their working life. Knowing I have worked with politicians, he asks me for my opinion: 'Everyone appears to do it differently depending on their circumstances, so there's no model, I wouldn't say. Who do you think's doing it well? What do you see?'

Jonathan is cautious about being 'pigeonholed'. For example, he has spoken several times in Parliament about a particular health condition, but worries that colleagues will see him as the person who 'keeps banging on about [the condition]. Whereas you want people to think of you as, oh you can go to him with anything.' He is critical of strategies used by MPs like David, who speak stridently about the causes they believe in. 'You can't just go steamrollering in, although some people have done that, and they've made themselves very unpopular. … So you have to tread really carefully.'

Jonathan has not spoken much about climate change, in Parliament or in his constituency. He says 'my priority is to stand up for my constituency'. Jonathan sees climate change as an abstract, long-term issue, which makes it hard to talk about. 'Telling people about the long term is a hard sell, you know it's not going to get in the local paper above [a story about how] one village has broadband and the other doesn't.' Every decision he makes, his constituency comes first. He tells me this is because of the UK's electoral system. Jonathan compares his marginal constituency with colleagues who have safe seats:

> There's a sort of a luxury that comes with a safer seat, you can say 'Well ok well I care about, whatever issue,' and make that your mission in life to change the world on one particular issue. Whereas when you're in a more marginal seat … you feel like you have to be doing a little bit of everything.

Jonathan describes a particular group within his constituency as 'retired, intelligent and affluent'. Such people like to make their views known to their local MP, he says, yet there is a danger in just listening to the loudest voices. He tries to make contact with people who would not think of approaching him. Of course, he wants their votes; but he also wants to make sure he is representing the interests of all his constituents, not just the campaigners and letter-writers.

Paul

'Paul' is a composite of four interviewees, three Conservative and one Liberal Democrat. All had served either five or six years; three were backbenchers and one had a role as a Parliamentary Private Secretary.

Paul has served two terms as an MP. When I ask him why he ran for Parliament, he says, 'it sounds rather trite, but coming into politics was an exercise in wanting to make a difference. My previous work [in the public sector] had taught me that there was plenty wrong in society.'

Paul says that he sees climate change as a 'gut' issue. He has thought a lot about it, but worries that it does not motivate his colleagues. He says they are generally 'not naturally inclined to be so interested in this policy area' and that there is no pressure from party leaders to get involved. He sees limited value in trying to persuade colleagues, and tries to find other ways to make progress. He gives me his ideas for reforming transport and energy policy, but is adamant that such policies should be justified solely on economic and social grounds, and that reducing carbon emissions, or tackling climate change, should not be given as a reason for action. In short, he advocates climate policy by stealth. 'I don't use climate change as the word because I think it's just toxic now in politics', he tells me. 'As is the way in these issues which are contentious, you won't take people with you politically.'

Paul worries that too much focus on climate change will alienate people – both local people in the constituency, and fellow MPs. He says, 'I think it is important not to be a climate change zealot.' He recently argued for better public transport in his local area, alongside a proposed road scheme. When I ask him whether he had talked about

the carbon emissions from transport, he says, 'I think if I had mentioned carbon emissions, there would have been a rolling of eyes and saying, "Oh here he goes again".' So he made his case in other ways. He is very deliberate in his choice of strategy, and in the words he uses.

He is pessimistic about the ability of parliamentary processes and mechanisms to bring about change. He tells me that he worried about this before he was elected, but 'I underestimated. There's no question I underestimated. The frustrations are much greater … it's a bunfight, nothing ever changes, you can become deeply cynical.' He says that how policy is designed 'ends up really mattering' and is more important than bold public statements. He mentions Bismarck's phrase: 'politics is the art of the possible'.

Paul has a different attitude to his constituents than David or Jonathan. He is not so strongly motivated by constituency work, he tells me. 'I enjoy the constituency stuff; it gives me a hell of a lot of information and knowledge which is of benefit to me here for the national stage. But ultimately, my job is here [in Parliament], it isn't there.' Though this attitude gives him more freedom to focus on the things that he sees as important, he is keen to point out that he is not dismissive of local views. He sees his constituency as a barometer of public opinion.

Paul talks about the possibility of profound change over time, using the example of equal marriage legislation to argue that change is possible through a combination of opinion shifts and careful policy. He worries, though, about moving too far, too fast. He says, 'however much it might look like the leaders are making decisions, in a democracy they are polling public opinion, they are asking people about their priorities, they're experiencing, just in the course of doing their job, where public opinion is.' This complex balancing act, he says, is the core of democratic process. So no matter how urgent the issue, 'the idea that you can somehow ignore the electoral result when setting your expectations of what government might do is, I think, profoundly undemocratic'.

Stephanie

'Stephanie' is a composite of four interviewees, all from the Labour Party, with a mean of 12 years' experience in Parliament. Two had been junior ministers, and two had served in the Cabinet.

Stephanie has been in the Commons for three terms, and has served as a minister. She expresses her views readily, and speaks with the relaxed confidence of someone who has proven their worth. Though she talks about her constituency, it is clear that it doesn't have the same pervasive influence on her as for younger or less experienced MPs. Neither is she as worried about what people think of her. When I tell her that other MPs are worried about being seen as outsiders if they make the case for action on climate change, she is surprised and even dismissive: 'There's no argument for staying quiet on any of this. You've got to speak out.'

Stephanie sees herself as a pragmatist, and says that others' expectations are unrealistic. 'The punters, the populace think that the politician, the prime minister for example, is all-powerful. Actually, they absolutely are not. I'm not saying they have no power, but they can't just do it.' This isn't an excuse for doing nothing, she says, but is instead a plea to focus on the practical steps necessary to achieve change.

This view is central to her argument about how to tackle climate change. It's not enough, she says, for politicians to be convinced of the science: 'Even if all the Cabinet today were completely persuaded, the question then of what you do about it, becomes a difficult and problematic issue.' She was in Parliament when the 2008 Climate Change Act was passed, and like the vast majority of MPs, voted for the legislation. She doesn't remember it being discussed much, though: 'The big issues were more around terrorism, anti-terrorism legislation, tax rates, and smoking in public places … I remember it going on in the background.' She thinks that the fact that there was a strong consensus might have meant that it was discussed less, saying that if 'you take it out of the day-to-day of political conflict, you shouldn't be surprised that people aren't talking about it'. Stephanie describes the group of politicians working directly on the Bill as 'the obsessives … I know it's offensive to use the term obsessives'. For her, she says, climate change 'probably falls into the basket of general progressive issues that sound good to ensure'.

I ask Stephanie more about this, talking about the likely impacts of climate change. She tells me that I'm missing the point. Just stating the problem, without regard to practical steps that can be taken, is counter-productive. 'The argument you've just made, that we're in a qualitatively different situation than we've ever been in history, in my opinion doesn't help the argument at all.' For the same reason, she criticises environmental organisations: 'motivation isn't about just a set of beliefs, it's about an ability to implement … this is a criticism I'd make of many of the green organisations, you just say it's all very worthy but what the fuck can you do?' Instead, she wants to focus on tangible objectives, promoting measures that improve local areas, like encouraging walking and cycling, creating jobs in the renewables industry, and so on.

Though Stephanie is less focussed than other interviewees on the views of her constituents and public opinion, she does also ask how realistic it is to expect significant change on an issue that barely features in public or media debate. Following the recession, she says, it has 'died' as an issue. Neither is it discussed much within her party: 'If either your party membership or the public are not flagging it up consistently as one of their top concerns or priorities, that is the issue.' She is keen to explore changes to the practice of politics that could enable a more constructive debate between parties on climate change. 'It's the ultimate challenge to politics, isn't it?' she says.

Conclusions and implications for practice

As the narratives show, the ways in which the politicians in this study approach climate change is influenced by their understanding of the scientific evidence, but also by their professional identity, their conception of their role as a representative, and the way they navigate the day-to-day realities of life as an MP. Each of these are discussed in turn, below. Based on this analysis, some implications for practice are drawn.

Climate change and identity

David's characterisation of himself as a 'freak', Jonathan's criticism of colleagues who become identified by a single issue and Paul's careful strategies to avoid being labelled a 'climate change zealot' all point to a strong awareness of social and cultural norms within

Parliament, which individuals compare themselves against. This confirms results of previous studies (e.g. Puwar, 2004). The pressures are particularly acute for new MPs. Whilst Stephanie, given her seniority and experience, says that she does not feel the need to conform, her description of the 'obsessives' advocating for climate change contributes to the sense that it is an outsider's issue. Taking an active role on climate does not fit current institutional norms. Thus politicians must choose to either keep quiet, like Jonathan, or develop strategies that they feel will not negatively affect their reputation or legitimacy. They may even, like Paul, do this by deliberately not mentioning climate change whilst championing policies which they feel to be appropriate solutions to the problem. The alternative is David's strategy of saying exactly what he thinks, even though he feels that it casts him as an outsider and could limit his career. This matters not just because it might affect David's career prospects, but also because, if climate advocates are less influential within the mainstream of each party, the issue will receive less attention.

This and other evidence (e.g. Hulme, 2009) shows that, for climate, the messenger is as important as the message. Politicians will feel more comfortable speaking out on climate change if they hear others do the same. More vocal support from party leaders and elders would help, as would advocacy from outside Parliament – for example, from business, civil society organisations and the scientific community.

Making a representative claim on climate change

To what extent can politicians reconcile action on climate change with their 'representative claim', as discussed above? Each politician sees their representative role differently, and constructs their claims differently. Some, like Paul, see themselves as primarily a representative at the national level, with their constituents informing, but not prescribing, their stance in Parliament. Others, like Jonathan, see their job as representing their local area as faithfully as possible. Within the group of interviewees, newer MPs were more likely to forge an account of their legitimacy based on their ability to respond to the demands of the people they represent.

This set of interviews suggests that politicians feel little pressure from those they represent to act on climate change. Nevertheless, some politicians, like Paul and Stephanie, find ways to connect climate change to issues of importance to those they represent – through making the link to job creation, better transport systems and so on. This can be seen as constructing a 'representative claim'. However, for such a claim to work, it must be accepted by those being represented. Hence the warnings of some MPs that their mandate for action on climate change is limited, and Paul's explicit warning that to ignore the electoral result is 'profoundly undemocratic'.

Thus the mandate for action on climate is not straightforward. Politicians need to play a mediating role between the scientific consensus embodied in the Paris Agreement, on the one hand, and current public views and demands, on the other, by building a 'representative claim' that action on climate is in the democratic interest. One possibility would be through the use of deliberative or collaborative approaches to politics at a local level (Dryzek, 2002), whereby Members of Parliament, together with local politicians and other stakeholders, use deliberative processes to discuss climate strategies which would benefit local areas. This could follow the model of participatory budgeting, for example (Davidson & Elstub, 2014).

It may be that the UK's constituency-based electoral system acts as a block to action on climate change; comparative research with politicians in other legislatures with contrasting electoral systems would help to identify whether this is the case. More fundamentally, the interviews highlight tensions between different time horizons, with politicians elected for five years or fewer, whilst being asked to take responsibility for issues playing out over decades. Sociological accounts of futures (Adam & Groves, 2007; Urry, 2016) stress that contestation over the future affects and is affected by current concerns. Some legislatures, including Hungary, Finland and Wales, have made this link explicit, by creating institutions such as an 'ombudsperson' or 'commissioner' tasked with representing future generations.

Is climate change a 'do-able problem'?

With her long experience of politics, Stephanie puts a particular emphasis on the need to focus on practicalities, and is critical about politicians and others who take a moral stand on an issue without offering actionable solutions. David, too, reminds us that politicians need to show results; Paul calls for realism about how difficult genuine reform is. Coupled with the pressures of day-to-day life in the Commons, it is clear that politicians feel that they need to craft 'do-able problems', to borrow Fujimura's (1987) phrase, out of the climate agenda. They seek ways of working on climate change which fit the working practices of Parliament and the institutions of policymaking. Interviewees gave examples of possible approaches, including reducing emissions from the transport sector through promoting public transport, incentivising renewable energy, policies to improve the energy efficiency of housing, and using industrial policy to promote low-carbon innovation strategies. These all provide a way for politicians to support bounded and achievable action on climate change, measures which fit within the established culture of politics and policymaking.

The question is whether action on climate change can indeed be crafted as a series of 'do-able problems'. Is it possible to envisage a set of responses which are politically and practically feasible, whilst significant enough to meet the statutory carbon targets laid down in the UK's Climate Change Act? The analysis of Parliament's independent adviser, the Committee on Climate Change, suggests that it may be (Committee on Climate Change, 2016). However, more radical critics maintain that meaningful action is incompatible with the global economic system, and that far-reaching changes to our economy and society are necessary (Jackson, 2011; Klein, 2015). Whilst this is not a view that politicians in this study held, four out of the 14 interviewees did single out climate change as an issue different to others, in that it threatens the benign environmental conditions that have underpinned our society for many thousands of years (Clark, 2011). David's comment that the House of Commons may one day be under water is a stark illustration of this.

Politicians need to perform a difficult juggling act: articulating the scale and significance of climate change, whilst also crafting and building support for tangible, achievable projects and initiatives to address it. Recent evidence from city-scale action on climate may point the way (Bulkeley, Broto, & Maassen, 2014). In recent years, however, the UK's climate strategy has been national in focus, with no targets or responsibilities being

given to local areas. A reinvigoration of local action on climate change may help to make the issue seem more tangible and 'do-able'.

The research presented here indicates that action on climate change poses considerable challenges for politicians. In short, even if they are convinced of the case for action, they find it difficult to craft responses that are credible, manageable and popular, within current institutions and systems of governance. However, there is much that could be done to support politicians in their crucial role on this issue.

Funding

References

Adam, B., & Groves, C. (2007). *Future matters: Action, knowledge, ethics*. Leiden, The Netherlands: Brill.

Bawden, T. (2015, January 5). Climate change activists blame Government for 'colossal failure' to make global warming a national priority. *The Independent*.

Biermann, F., Abbott, K., Andresen, S., Bäckstrand, K., Bernstein, S., Betsill, M. M., … Zondervan, R. (2012). Transforming governance and institutions for global sustainability: Key insights from the Earth System Governance Project. *Current Opinion in Environmental Sustainability*, *4*, 51–60.

Brown, M. (2015, March 6). Gormley climate change artwork shown for first time in the Guardian. *The Guardian*.

Bulkeley, H., Broto, V. C., & Maassen, A. (2014). Low-carbon transitions and the reconfiguration of urban infrastructure. *Urban Studies*, *51*, 1471–1486.

Camberlain, J. (2013). Climate change, lack of political will leading to 'global perfect storm'. *Common Dreams*. Retrieved from http://www.commondreams.org/news/2013/01/08/climate-change-lack-political-will-leading-global-perfect-storm-report (accessed 12 September 2016).

Carter, B., & Charles, N. (2009). Society, nature and sociology. *The Sociological Review*, *57*(suppl. 2), 1–20.

Carter, N. (2013). Greening the mainstream: Party politics and the environment. *Environmental Politics*, *22*, 73–94.

Chappell, L. (2006). Comparing political institutions: Revealing the gendered 'logic of appropriateness'. *Politics & Gender*, *9*, 223–235.

Clark, N. (2011). *Inhuman nature: Sociable life on a dynamic planet*. London, UK: Sage.

Committee on Climate Change. (2016). *Meeting carbon budgets – 2016 progress report to parliament*. London, UK: Author.

Crewe, E. (2015). *The House of Commons: An anthropology of MPs at work*. London, UK: Bloomsbury.

Davidson, S., & Elstub, S. (2014). Deliberative and participatory democracy in the UK. *British Journal of Politics & International Relations*, *16*, 367–385.

Dobson, A., & Hamilton, L. (2016). Review exchange: Representation and political theory. *European Political Science*, *15*, 570–578.

Douglas, M. (1986). *How institutions think*. Syracuse, NY: Syracuse University Press.

Dryzek, J. S. (2002). *Deliberative democracy and beyond: Liberals, critics, contestations*. Oxford, UK: Oxford University Press.

Eckersley, R. (2004). *The green state: Rethinking democracy and sovereignty*. Cambridge, MA: MIT Press.

Fujimura, J. H. (1987). Constructing 'do-able' problems in cancer research: Articulating alignment. *Social Studies of Science*, *17*, 257–293.

Giddens, A. (2009). *The politics of climate change*. Cambridge, UK: Polity.

Gurría, A. (2008, June). *Climate change: A matter of political will*. Speech by Angel Gurría, OECD Secretary General, OECD Forum. Retrieved from http://www.oecd.org/env/tools-evaluation/climatechangeamatterofpoliticalwill.htm (accessed 5 March 2017).

Horton, D. (2003). Green distinctions: The performance of identity among environmental activists. *The Sociological Review*, *51*, 63–77.

Hulme, M. (2009). *Why we disagree about climate change: Understanding controversy, inaction and opportunity*. Cambridge, UK: Cambridge University Press.

Intergovernmental Panel on Climate Change. (2014). *Climate change 2013: The physical science basis*. New York, NY: Cambridge University Press.

Jackson, T. (2011). *Prosperity without growth: Economics for a finite planet*. London, UK: Earthscan.

Jasanoff, S. (2010). A new climate for society. *Theory, Culture and Society*, *27*(2–3), 233–253.

Johnson, E., Morehouse, H., Dalby, S., Lehman, J., Nelson, S., Rowan, R., … Yusoff, K. (2014). After the Anthropocene: Politics and geographic inquiry for a new epoch. *Progress in Human Geography*, *38*, 439–456.

Klein, N. (2015). *This changes everything: Capitalism vs. the climate*. London, UK: Penguin.

Laidley, T. (2013). Climate, class and culture: Political issues as cultural signifiers in the US. *The Sociological Review*, *61*, 153–171.

Latour, B. (1987). *Science in action: How to follow scientists and engineers through society*. Cambridge, MA: Harvard University Press.

Latour, B. (2014). Agency at the time of the Anthropocene. *New Literary History*, *45*, 1–18.

Law, J. (2004). *After method: Mess in social science research*. London, UK: Routledge.

Law, J., & Urry, J. (2004). Enacting the social. *Economy and Society*, *33*, 390–410.

Lawler, S. (2014). *Identity: Sociological perspectives*. Cambridge, UK: Polity.

Lewis, O. A., & Steinmo, S. (2012). How institutions evolve: Evolutionary theory and institutional change. *Polity*, *44*, 314–339.

Lovenduski, J. (2012). Prime Minister's questions as political ritual. *British Politics*, *7*, 314–340.

Lucas, C. (2015). *Honourable friends?: Parliament and the fight for change*. London, UK: Portobello Books.

Malley, R. (2012). *The institutionalisation of gendered norms and the substantive representation of women in Westminster and the Scottish parliament* (Unpublished PhD thesis). University of Bristol, UK.

Mansbridge, J. (2003). Rethinking representation. *American Political Science Review*, *97*, 515–528.

McKay, J. (2011). 'Having it all?' Women MPs and motherhood in Germany and the UK. *Parliamentary Affairs*, *64*, 714–736.

Moir, E., & Leyshon, M. (2013). The design of decision-making: Participatory budgeting and the production of localism. *Local Environment*, *18*, 1002–1023.

Morris, Z. S. (2009). The truth about interviewing elites. *Politics*, *29*, 209–217.

Norgaard, K. M. (2006). 'We don't really want to know': Environmental justice and socially organized denial of global warming in Norway. *Organization Environment*, *19*, 347–370.

Oakley, A. (1988). Interviewing women: A contradiction in terms. In H. Roberts (Ed.), *Doing feminist research* (pp. 30–61). London, UK: Routledge.

Piper, H., & Sikes, P. (2010). All teachers are vulnerable but especially gay teachers: Using composite fictions to protect research participants in pupil–teacher sex-related research. *Qualitative Inquiry*, *16*, 566–574.

Puwar, N. (1997). Reflections on interviewing women MPs. *Sociological Research Online*, *2*.

Puwar, N. (2004). *Space invaders: Race, gender and bodies out of place*. Oxford, UK: Berg.

Rhodes, R. A. W. (2011). *Everyday life in British government*. Oxford, UK: Oxford University Press.

Rickards, L., Wiseman, J., & Kashima, Y. (2014). Barriers to effective climate change mitigation: The case of senior government and business decision makers. *Wiley Interdisciplinary Reviews: Climate Change*, *5*, 753–773.

Riessman, C. K. (2005). Narrative analysis. In N. Kelly, et al. (Eds.), *Narrative, memory and everyday life* (pp. 1–7). Huddersfield, UK: University of Huddersfield.

Riessman, C. K. (2008). *Narrative methods for the human sciences*. Los Angeles, CA: Sage.

Saunders, B., Kitzinger, J., & Kitzinger, C. (2015). Anonymising interview data: Challenges and compromise in practice. *Qualitative Research*, *15*, 616–632.

Saward, M. (2006). The representative claim. *Contemporary Political Theory*, *5*, 297–318.

Smart, C. (2010). *Disciplined writing: On the problem of writing sociologically* (Working paper). Morgan Centre, University of Manchester, UK.

Tolich, M. (2004). Internal confidentiality: When confidentiality assurances fail relational informants. *Qualitative Sociology*, *27*, 101–106.

United Nations Framework Convention on Climate Change. (2015). *Adoption of the Paris Agreement*. Retrieved from https://unfccc.int/resource/docs/2015/cop21/eng/l09r01.pdf (accessed 4 September 2017).

Urbinati, N., & Warren, M. E. (2008). The concept of representation in contemporary democratic theory. *Annual Review of Political Science*, *11*, 387–412.

Urry, J. (2009). Sociology and climate change. *The Sociological Review*, *57*, 84–100.

Urry, J. (2011). *Climate change and society*. Cambridge, UK: Polity Press.

Urry, J. (2016). *What is the future?* Cambridge, UK: Polity.

Willis, R. (2017). Taming the climate? Corpus analysis of politicians' speech on climate change. *Environmental Politics*, *26*, 212–231.

Wynne, B. (2010). Strange weather, again: Climate science as political art. *Theory, Culture and Society*, *27*(2–3), 289–305.

Paper 3

**The use of composite narratives to present
interview findings**

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The use of composite narratives to present interview findings

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Abstract

This research note describes the use of composite narratives to present interview data. A composite narrative uses data from several individual interviews to tell a single story. In the research discussed here, investigating how politicians consider climate change, four composites were created from fourteen interviews with Members of the UK Parliament. A method for creating composite narratives is described. Three, linked, benefits of the technique are discussed. First, they allow researchers to present complex, situated accounts from individuals, rather than breaking data down into categories. Second, they confer anonymity, vital when reporting on private deliberations, particularly if interviewees are public figures. Third, they can contribute to 'future-forming' research, by presenting findings in ways that are useful and accessible to those outside academia. The main limitation of composite narratives is the burden of responsibility upon the researcher, to convey accurate, yet anonymized, portrayals of the accounts of a group of individuals.

Keywords

anonymity, climate change, composite narratives, elite interviews, interviews, narrative methods, politicians, UK

Introduction

Although a great deal has been written about the politics of climate change (Giddens, 2009; Urry, 2011) there has been little research aimed at understanding how politicians themselves understand or respond to the issue (Rickards et al., 2014). In contrast, there are studies exploring the environmental views and behaviours of individuals (Laidley, 2013; Norgaard, 2006) and the outlook of business leaders (Wright et al., 2012). The research described here aimed, therefore, to take a similar, explicitly qualitative and sociological approach to examine how politicians understand their role.

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A major part of the study was a set of fourteen interviews with current and former Members of the UK Parliament in 2016, drawing on Riessman's (2008) narrative method, and conducted under conditions of anonymity. In the first half of the interview, participants were encouraged to reflect on their working life, including their ambitions, and the influences and pressures upon them. They were then asked to consider how they approached the issue of climate change. As the interviewer, I was impressed and somewhat surprised by my subjects' reflectiveness, with many showing a disarming frankness about their professional and personal struggles. I was left with a set of complex and personal interview accounts, and the tricky question of how to do justice to this richness, whilst maintaining the anonymity which, as many of my subjects told me, was crucial to them speaking out.

The results of the study are published in an article in the *Sociological Review* (Willis, 2017a). This research note discusses one aspect of data analysis and presentation: the use of what I term 'composite narratives', in which a number of interviews are combined and presented as a story from a single individual. Though this approach is rarely used, it seemed to me to be a good response to the tricky question described above: how to present an authentic yet anonymous story.

Below, I firstly describe how I arrived at the decision to develop composite narratives, and the process I engaged in to draw up the composites. I then discuss the advantages of this approach, and the potential drawbacks. The note ends by suggesting that being transparent about the way in which composite narratives are developed might help to overcome these issues.

Using fictions to convey 'emotional truth'

> Glossy hair, shiny shoes, white teeth . . . This woman is beautiful, mid-twenties, successful. She delivers her material as though saying: 'Pretty gripping stuff, eh? What do you make of that, oh therapist?' (Blundy, 2017)

Psychotherapist Anna Blundy writes a monthly column for *Prospect Magazine*, offering intimate accounts of her conversations with patients, to inform and to entertain her readers. But none of these characters actually exist. At the end of every column, there is a small disclaimer: 'the situation described above is composite, and confidentiality has not been breached' (Blundy, 2017). The therapist Susie Orbach takes a similar approach. In her book *The Impossibility of Sex* (2000), she draws on her vast clinical experience to invent seven fictional characters, describing the complexities of the patient-therapist relationship.

Both Blundy and Orbach state that they use composite accounts to prevent breaches of patient confidentiality. Orbach also alludes to a further advantage of composites: she can use a single story to tell a more generally representative account of the experience of her patients. Thus she is not just talking about one individual; she is instead using her judgement to create stories which capture the essence of her patients' lives, experience and perspectives. Orbach calls this 'emotional truth' (2000: 196), defined as 'an authentic representation of feeling states rather than a strict adherence to narrative truth' (2000: 197).

In taking this approach, Orbach has much in common with qualitative sociological researchers. With qualitative methods, researchers use their experience and judgement to make sense of large quantities of data, from interviews or ethnographic observations, for example. Researchers select, interpret, order and arrange data, in order to analyse and present research findings (Law, 2004). Creating stories or narratives based on a range of individual accounts is one way to do this.

Like Orbach and Blundy, I was drawn to storytelling by the data I had in front of me. I had conducted fourteen interviews with politicians, and they had talked to me about their life and work, their aspirations and concerns, and the nitty-gritty of how they got through their working day. The picture thrown out by the data was richer, more tangled and more personal than I had expected. It did not seem to me to be appropriate to analyze the data through 'standard' categorization, such as party affiliation, social background, gender, age or previous experience. Of course, all these factors are significant, as evidenced by previous research (see, for example, Carter (2013) on the differences between political parties; and the work of McKay (2011) and Puwar (2004) on gender in politics). Yet my aim was not to distinguish *between* politicians, through comparisons and categorizations. Instead, it was to investigate how politicians, as (a group of) people, navigate their life and work.

An obvious solution would have been to focus on particular individuals, as case studies. I could have picked, say, four individual politicians, and given a full account of each. However, I was prevented from doing this by the need to preserve anonymity. Each subject had agreed to the study under condition of anonymity. As public figures, politicians can be identified easily, even if personal details are disguised. Thus I had the idea of combining individual accounts, to form a composite. As with Orbach's work, this would also have the advantage of writing narratives which, together, give a picture of the group as a whole.

With this in mind, I undertook a search of literature on qualitative research, assuming that presenting interview data in this way would be commonplace. To my surprise, it appeared to be a technique rarely used. In addition to the psychotherapy examples described above, a small number of other studies emerged. Wertz et al. (2011) describe the use of 'composite first person narratives'. For example, a story of an obese adolescent girl, told from her point of view, illustrates the 'body shaming' that such individuals may feel. As Wertz et al explain,

> The individual narratives of each study participant are unified with the reflexive understandings of the researcher . . . [which] affords the reader the ability to explore the 'felt-sense' of the informants' experiences. (2011: 8)

Similarly, a study by Piper and Sikes (2010) of sexual relationships between teachers and pupils uses fictionalized stories, based on ethnographic and interview data. Though dialogue and contextual details are fabricated, the researchers did not make up 'anything that directly related to people's experiences and perceptions of allegations of abuse as told to us' (Sikes and Piper, 2010: 43). Their prime reason for using this approach was protection of anonymity, particularly given the risk of media intrusion. Annette Markham (2012) also describes how she creates composite accounts to present data gathered from

online sources, which could otherwise, if quoted directly, be traced easily through search engines. Markham deliberately and provocatively uses the term 'fabrication' to 'interrogate and destabilize the mistaken and often unspoken assumption that invention necessarily represents a lack of integrity'. (2012: 336).

Inspired by these examples, I began to experiment with creating composites from my interview data, that would convey 'emotional truth', to use Orbach's phrase (2000: 196). In doing so, I began to formalize a more rigorous method, in order to give a clear account of how the composites were derived. This is described below.

Developing a methodology for composite narratives

Whilst the use of composites discussed above (Orbach, 2000; Piper and Sikes, 2010; Wertz et al., 2011) are a compelling way of presenting research, the link between the original data and the final story is not clear. The process by which the original speech becomes a written narrative is opaque. Readers are asked to simply put their faith in the researcher's judgement. To a certain extent, all qualitative research faces this issue; researchers must use their judgement to analyse and present unwieldy amounts of 'raw' data in the form of interview data or ethnographic fieldnotes. By documenting the way in which the data has been analysed and presented (describing, for example, the process of coding; decisions about what extracts to include; decisions about any categorization, and so on) the researcher can build trust in the research process and the subsequent findings.

I started to consider ways in which I could do this. I wanted to demonstrate that the narratives were derived directly from the original data. I decided that all the quotations I used would be verbatim quotations from the original interviews, and likewise, all the details from the narratives would be taken from one or more of the original interviews. When I submitted the article for peer review, however, the reviewers were broadly supportive of the composite narrative approach, but all asked for more clarity about how they were derived. One wrote

> The idea of composite narratives is interesting, partly as a way of dealing with the difficulties of anonymising politicians' statements. However, you would need to tackle some serious questions about precisely how you compiled the composites and what we can deduce from them.[1]

As a result, in a subsequent draft, I developed a much more detailed and transparent account of the process of deriving composite narratives. I devised four practices to govern the process of composing the narratives, as follows:

1. Each composite is based on transcripts from interviews. 3–5 transcripts are condensed into one composite narrative. For example, 'Jonathan' is a composite of three interviewees from different parties, all relatively new to their roles as MPs and sharing similar concerns about speaking out on the issue. In contrast, another narrative, 'Stephanie', is a composite of four experienced MPs, who had all served as ministers.

2. All quotations come directly from these interview transcripts.
3. Other details, such as where the interview took place; how the conversation evolved; and any paraphrasing of discussions, are taken directly from one of the source interviews.
4. In the narrative itself, I avoid imposing any judgement on the interviewees' experiences and opinions, and do not assume motivations or feelings. Any comments of this nature in the narrative are taken directly from the interviewees. For example, in the composite narrative 'David', concerns are raised that if politicians are vocal about 'controversial' issues like climate change, this might affect their opportunities for promotion. In the narrative, this is reported as follows: 'David feels that his commitment has come at a price', showing that this is his reading of events, not the researcher's interpretation.

Taken together, these practices ensure that there is a clear link between the original interview transcripts and the final narratives. The only modification is to present data from several interviewees as if it were from a single individual. I use the term 'narrative', not 'fiction', to emphasize the fact that they are derived solely from the data.

The resulting composite narratives

Following this approach, I created four composite narratives from fourteen interview transcripts. Several different groupings of composites were considered, and of course, the stories could have been combined in any number of different ways. I chose the final groupings as they seemed to me to best convey the range of positions and views that the data revealed. A full description of the method, and the final composite narratives, each of a length of around 500–600 words, is presented elsewhere (Willis, 2017a) and summarized below. The composites mix interviewees of both genders, but in order to tell the story in a readable way, a gender is assigned to each, roughly representing the gender balance of the House of Commons as a whole (71 percent male in the 2015–2017 administration).

'David' is formed from a composite of three interviewees, all relatively new to parliament. David speaks out about the need to act on climate change, even though this means that his colleagues see him as a 'freak'.

'Jonathan' is a composite of three MPs, one Labour, two Conservative. In contrast to David, Jonathan worries about being too vocal on issues that he sees as controversial. His primary concern is to support his constituents.

'Paul' is formed from four interviewees. He has more experience than David or Jonathan. He wants to tackle climate change, and focuses on the tactics by which action can be achieved.

'Stephanie' is a composite of four interviewees, all of whom have served in government. Stephanie's overriding concern is the slow pace of change, and the need to focus on practical, achievable steps.

Following the presentation of the four narratives, the article (Willis, 2017a) examines three themes common to each: questions of identity, or how politicians understand their own role and life; the question of how politicians interpret and execute their role as

representatives; and the issue of how each MP manages the pressure and complexity of everyday life.

Why use composite narratives?

This research highlights three potential benefits of using composite narratives, discussed below.

Complex, situated accounts

Given that the aim of this project was to examine the outlooks and motivations of politicians, as individuals within a wider system of democratic governance, there was a need for a method that allows the complexities of an individual's position to be presented and explored.

The urge to resist typologies and categorizations, and instead to find ways to convey the richness and complexity of an individual's perspective, is common to much qualitative research. Examples include the body of work on illness narratives which moves beyond medical categorizations to focus on the lifeworld of the patient (for a dicussion see Atkinson, 2010); the studies described by Wertz et al. (2011) discussed above; and feminist research such as Puwar's (2004) study of female and ethnic minority MPs.

In his review of 'narrative ethics', Tony Adams asserts that, in any such research which focuses on eliciting narrative, it would be wrong to categorize or de-personalize accounts in presenting the data: 'we must not approach stories with a prescription or typology for analysis; an evaluation of narrative must remain contingent on the stories, authors, and audiences as they interact' (Adams, 2008: 179). Instead, as John Law writes in describing 'messy' methods, the challenge is 'to keep the metaphors of reality-making open, rather than allowing a small subset of them to neutralize themselves and die in a closed, singular, and passive version of out-thereness' (2004: 139). In keeping with this orientation, narratives aim to embrace the account provided by the individual, rather than searching within it for an objective 'truth' (Adams, 2008; Riessman, 2008; Thomas, 2010). As Riessman writes, 'narratives are useful in research precisely because storytellers interpret the past rather than reproduce it as it was' (2005: 6). Narratives allow research to be presented in a way which acknowledges the complexities of individual motivations and outlooks, whilst drawing out more generalized learning and understanding.

Anonymity

The more context and detail offered in a narrative account, however, the greater the chance of compromising anonymity. An important advantage of composite narratives is that they allow the presentation of contextualized stories, without resorting to fiction, and whilst offering a significant degree of anonymity.

Members of Parliament are public figures, with a great deal of information about them in the public domain, particularly given the ease of online data gathering. Ensuring anonymity is, therefore, much more complex than changing names and withholding basic personal data (Saunders et al., 2015; Tolich, 2004). MPs can be identified by their

political party, constituency represented, stated views on a particular issue, voting record, or, most likely, some combination of these. To ensure anonymity, details must therefore be removed or altered. However, doing so removes vital context, and works against the aims of providing a situated account, described above. Composite narratives protect anonymity through mixing accounts, thereby preventing the possibility of identifying a research subject through a combination of details.

Much discussion of anonymity has focused on the need to protect vulnerable research subjects, such as Piper and Sikes' (2010) teachers and pupils involved in accusations of abuse, and Saunders et al.'s (2015) family members of people in minimally conscious states. Politicians may not be seen as 'vulnerable' in this sense. Yet their status as public figures confers a different type of risk or vulnerability. In her discussion of elite interviewing, Morris (2009) reports that whereas elite interviewing is typically held to be problematic because the interviewees are powerful figures, she instead argues that researchers 'have power over the respondent through the process of research . . . control of what is published and control of meaning'. (Morris, 2009: 213) In this sense, elite interviewees are particularly vulnerable to breaches of anonymity.

In my case, politicians spoke openly to me about the dilemmas they faced in deciding whether to speak out on issues that they saw as controversial or difficult. For example, one admitted to feeling lost and unsupported as a new MP. Many were critical of the stances taken by their colleagues. These interviewees would have been embarrassed at best, and possibly severely compromized, if their identity was revealed.

Future-forming research

Last, a crucial additional advantage of composite narratives is that, by providing contexualized and personalized accounts, they can help to build understanding of particular people and groups, in ways that are accessible to non-academic audiences.

For example, my work has proven useful for people who want to work with politicians to build political responses to climate change, including scientists and advocates from pressure groups. Because composite narratives are based on anonymized conversations, they provide insights that might not be forthcoming if MPs were speaking in the public domain. I have presented this research to audiences of scientists and practitioners, who commented that it gave them an insight into how MPs think through their working life and strategy. The work is now being used by a coalition of advocacy organizations, to evaluate their parliamentary campaigns. Similarly, many illness narratives aim to provide healthcare practitioners with an understanding of patients' lived experience, thereby improving care practices (see Mishler, 2005 for a discussion).

Such research can be seen as part of a wider project of what Gergen (2015) terms 'future-forming' research. Gergen distinguishes between, on the one hand, social sciences which take from the natural science tradition an aim of mirroring reality; and on the other hand, a 'reflexive pragmatism' (2015: 287) which sees research as situated within the social world, with an explicit ethical stance and aim for intervention, rather than just description or analysis. The research described in this article, a collaborative project between a university and an environmental advocacy organization, was designed to do precisely this: using academic methods to improve outcomes for climate policy and

politics. Whilst not all research using composite narratives is necessarily 'future-forming', this project, as well as examples from the field of healthcare, demonstrates that composite narratives lend themselves well to this sort of applied research.

Evaluating the use of composite narratives

My approach to composite narratives, and particularly the development of a transparent route from the data to the narrative, as described above, helps to build confidence that the composites are a meaningful representation of the original data.

Yet even with this more formalized approach to composite narratives, there is a danger that in merging accounts from different individuals and presenting them as one, the narratives becomes simplistic or caricatured. For example, I could have combined interviews in a different way, to create a narrative about a timid, newly-elected MP who feels completely overwhelmed by their role. Many interviewees did express feelings of doubt or worry to me, and I could have combined these to create one composite of a nervous, overwhelmed politician. However, this would not have been true to the data, as everyone I interviewed had a certain degree of self-assurance and confidence, unsurprisingly given the job they were doing.

As this example illustrates, when creating composite narratives, there is a considerable burden on the researcher to develop composites that 'fit' the underlying data. In common with much qualitative research, including narrative techniques and ethnography, the reader relies on the researcher's interpretation and presentation of data. The researcher needs a level of understanding and familiarity with the context of the study, in order to judge what makes a meaningful composite. In my case, I had worked with politicians for many years, and understood the world of parliament in general and the politics of climate change in particular; this meant that I had a depth of understanding which enabled me to write up data in this way.

There may also be a danger of privileging narrative, relying too much on accounts provided by individuals, and not seeing the wider context or structure within which the narrative is set. For example, one of my interviewees told me that he had not been promoted within his party, because of his outspokenness. As a peer reviewer of my article commented rather archly, he could have been overlooked for promotion simply because he is not very talented. This difficulty can be overcome not by trying to get to the 'truth' buried in each account, which is an impossible task, as discussed above; but by using a range of different methods to triangulate and situate narrative accounts. In this instance, there is other evidence (see for example Rickards et al., 2014; Willis, 2017b) that politicians and other leaders do indeed feel the need to modify their views in order to progress in their careers.

In summary, this research illustrates that composite narratives provide an effective means of presenting anonymized interview data, while maintaining the richness and complexity of personal stories. Researchers can demonstrate the validity of the narratives through following a transparent process in drawing the interviews together to form composites.

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Note

1. Reviewer comments to author, on original draft of Willis (2017a).

References

Adams TE (2008) A review of narrative ethics. *Qualitative Inquiry* 14(2): 175–194.

Atkinson P (2010) The contested terrain of narrative analysis – an appreciative response. *Sociology of Health & Illness* 32(4): 661–662.

Blundy A (2017) Life of the mind: a perfect lie. *Prospect Magazine*. Available at: https://www.prospectmagazine.co.uk/magazine/life-of-the-mind-a-perfect-lie

Carter N (2013) Greening the mainstream: party politics and the environment. *Environmental Politics* 22(1): 73–94.

Gergen KJ (2015) From mirroring to world-making: research as future forming. *Journal for the Theory of Social Behaviour* 45(3): 287–310.

Giddens A (2009) *The Politics of Climate Change*. Cambridge: Polity Press.

Laidley T (2013) Climate, class and culture: political issues as cultural signifiers in the US. *Sociological Review* 61(1): 153–171. DOI: https://doi.org/10.1111/1467-954X.12008

Law J (2004) *After Method: Mess in Social Science Research*. London: Routledge.

Markham A (2012) Fabrication as ethical practice. *Information, Communication & Society* 15(3): 334–353.

McKay J (2011) 'Having it all?' Women MPs and motherhood in Germany and the UK. *Parliamentary Affairs* 64(4): 714–736.

Mishler EG (2005) Patient stories, narratives of resistance and the ethics of humane care: à la recherche du temps perdu. *Health* 9(4): 431–451.

Morris ZS (2009) The truth about interviewing elites. *Politics* 29(3): 209–217.

Norgaard KM (2006) 'We don't really want to know': environmental justice and socially organized denial of global warming in Norway. *Organization & Environment* 19(3): 347–370.

Orbach S (2000) *The Impossibility of Sex*. London: Penguin.

Piper H and Sikes P (2010) All teachers are vulnerable but especially gay teachers: using composite fictions to protect research participants in pupil–teacher sex-related research. *Qualitative Inquiry* 16(7): 566–574.

Puwar N (2004) *Space Invaders: Race, Gender and Bodies Out Of Place*. Oxford: Berg.

Rickards L, Wiseman J and Kashima Y (2014) Barriers to effective climate change mitigation: the case of senior government and business decision makers. *WIREs Climate Change* 5(6): 753–773.

Riessman CK (2005) Narrative analysis. In: Kelly N et al. (eds) *Narrative, Memory and Everyday Life*. Huddersfield: University of Huddersfield.

Riessman CK (2008) *Narrative Methods for the Human Sciences*. Los Angeles: Sage.

Saunders B, Kitzinger J and Kitzinger C (2015) Anonymising interview data: challenges and compromise in practice. *Qualitative Research* 15(5): 616–632.

Sikes PJ and Piper H (2010) Researching sex and lies in the classroom: allegations of sexual misconduct in schools. London: Routledge.

Thomas C (2010) Negotiating the contested terrain of narrative methods in illness contexts. *Sociology of Health & Illness* 32(4): 647–660.

Tolich M (2004) Internal confidentiality: when confidentiality assurances fail relational informants. *Qualitative Sociology* 27(1): 101–106.

Urry J (2011) *Climate Change and Society*. Cambridge: Polity Press.

Wertz MS et al (2011) The composite first person narrative: texture, structure, and meaning in writing phenomenological descriptions. *International Journal of Qualitative Studies on Health & Well-Being* 6(2): 1–10.

Willis R (2017a) How members of parliament understand and respond to climate change. *Sociological Review* 66(3): 475–491.

Willis R (2017b) Taming the climate? Corpus analysis of politicians' speech on climate change. *Environmental Politics* 26(2) 212–231.

Wright C, Nyberg D and Grant D (2012) 'Hippies on the third floor': climate change, narrative identity and the micro-politics of corporate environmentalism. *Organization Studies* 33(11): 1451–1475.

Author biography

Rebecca Willis' current ESRC-funded research looks at UK politicians' treatment of climate change, and is a joint project between Lancaster University and Green Alliance. Rebecca is a Trustee of the New Economics Foundation and a member of the Scientific Advisory Committee of the RCUK Energy Programme. Her website is: www.rebeccawillis.co.uk.

Paper 4

Constructing a 'representative claim' for action on climate change: Evidence from interviews with politicians

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Article

Constructing a 'Representative Claim' for Action on Climate Change: Evidence from Interviews with Politicians

Rebecca Willis

Abstract

At the 2015 Paris Summit, global leaders agreed a strategy to tackle climate change. Under the agreement, each country must prepare a national plan. What challenges does this pose for politicians? How do they reconcile their representative role with understandings of climate change and measures required to address it? This article analyses interviews with UK politicians, through the framework of the 'representative claim' developed by Michael Saward, seeing representation as a dynamic interaction between politicians and those they claim to represent. Thus, politicians need to construct a 'representative claim' to justify action on climate. Four different types of claims are identified: a 'cosmopolitan' claim, a 'local prevention' claim, a 'co-benefits' claim and a 'surrogate' claim. The analysis shows that it is not straightforward for a politician to argue that action is in the interests of their electorate and that climate advocates need to support efforts to construct and defend claims.

Introduction

The scientific consensus on climate change is strong, and evidence points to the need to take action to drastically reduce emissions of greenhouses gases (Intergovernmental Panel on Climate Change (IPCC), 2014). At the Paris summit in 2015, 195 world leaders agreed to act, with each country committing to a national plan for emission reduction. National politicians, therefore, have responsibility for developing their country's plan, putting in place the strategies, policies and incentives necessary to facilitate emission reductions.

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But how does this political commitment to act on climate change link to democratic representation at the national or local level? The scientific case may be made, but questions remain as to how (or indeed whether) this fits with a politician's mandate as an elected representative, given that public concern about climate change is low compared to other political issues (Pidgeon, 2012). This article considers action on climate change through the lens of political representation and presents evidence from a set of interviews with Members of the UK Parliament (MPs).

The article begins with a discussion of political representation, particularly the theory of the 'representative claim' developed by Michael Saward (2010). Saward sees representation not as a static fact but as a dynamic relationship between a representative and the represented. The politician must put forward a claim, which may be accepted, rejected or ignored by those that he or she represents.

This theoretical lens is used to analyse the way in which politicians reconcile their representative role with their understanding of the need for political action on climate change. Data are taken from 14 interviews carried out in 2016. The interviews show that climate change poses a representation dilemma for politicians. While they acknowledge that action on climate change is necessary, they report little or no pressure from their electorate to speak or act on the issue. Politicians shape the way that they talk about and act on climate, crafting the issue in a way that they feel will be meaningful to those they see themselves as representing, in order to justify their actions and garner support. In other words, they make a 'representative claim'. Doing this is not straightforward, given the complex nature of the problem and the low levels of public concern.

Among the politicians interviewed, four different types of representative claim were identified. First, some MPs make a *cosmopolitan claim*, saying that it is in the interests of the human species as a whole to act, and therefore, it should be a concern for all politicians. Second, some frame the issue as a *local prevention claim*, in which they assert that action is necessary to prevent impacts such as flooding in their local area. Third, some point to the economic or social benefits arising from taking action on climate change, such as jobs created in renewable energy industries. This can be called a *co-benefits claim*, as politicians are claiming that such action helps towards tackling climate change, as well as bringing other specific local benefits. Last, some politicians judge that they cannot speak out on climate change because a direct claim would be opposed or ignored. Instead, they make what might be called a *surrogate claim*, in which climate change is not explicitly mentioned. Instead, other reasons are given for measures which the politician privately believes will help to tackle climate change.

The interviews show that politicians feel constrained in acting on climate change, but some nonetheless find ways of building a representative claim. The article concludes with a discussion of the implications of this analysis for the theory of representative claims and suggests ways in which politicians could be better supported to act on climate change.

Although the politics and governance of climate change has been discussed extensively, across the fields of political studies and international relations (see, for example, Giddens, 2009; Underdal, 2017), there has been relatively little attention to the ways in which politicians, as crucial actors within political systems, understand or respond to the issue (Rickards et al., 2014). This article contributes to a greater understanding of the specific role of politicians, supplementing the accounts of governance and political systems described above. In doing so, it tests empirically a contemporary theory of representation, contributing to a greater understanding of the representative role of elected politicians.

Theorising Representation: The Representative Claim

How should an MP, elected by the voters of a geographical constituency, approach their representative role? The meaning of representation has been debated for many centuries (Dobson and Hamilton, 2016; Mansbridge, 2003). Summarising a complex picture, Urbinati and Warren (2008: 388) identify what they term 'standard accounts of democratic representation, focused primarily on territorially based electoral representation'. However, this 'standard account' is under increasing pressure:

> … territoriality, though historically essential to the evolution of democratic representation, identifies only one set of ways in which individuals are involved in, or affected by, collective structures and decisions. Issues such as migration, global trade, and environment, for example, are extraterritorial; they are not contained by any existing territorially organised polity (Urbinati and Warren, 2008: 389–390).

Neither does territoriality account for issues such as religion, ethnicity or gender identity, or the role of non-elected actors in politics, such as businesses or civil society groups organising around issues rather than places. Meanwhile, the vexed question of whether or how nature and non-human species get a hearing in the democratic process is not solved by standard accounts of representation (Dobson and Hamilton, 2016).

As these standard accounts have come under increasing pressure, Michael Saward has proposed a shift in how representation can be understood. He argues that representation should be seen not as a static fact but as a dynamic exchange between representatives and those being represented, in which a politician (or anyone else seeking a representative role) can make a claim, which in turn is accepted or rejected by others:

> Political representation is not simply a fact of political life, or an achieved state of affairs, resulting from elections. Rather, at a deeper level, representation is a dynamic process of claim-making and the reception of claims (Saward, 2010: 8).

Thus, the job of the politician is to demonstrate, through words and action, the ways in which they represent: 'representation is an ongoing process of making and receiving, accepting and rejecting claims – in, between, and outside electoral cycles' (Saward, 2010: 36). Politicians make and modify their claims, in a dialogue with those they seek to represent, to demonstrate that they are carrying out their role appropriately and effectively.

Saward sets out schematically how a representative claim is constructed. Each claim has a 'maker', who sets out the claim; a subject, put forward as the representative; an 'object', the group to be represented; a 'referent' (the wider pool from which the object is drawn); and an 'audience', who, crucially, can accept, reject or ignore the claim. A claim therefore follows this pattern:

> A maker of representations ('M') puts forward a subject ('S') which stands for an object ('O') that is related to a referent ('R') and is offered to an audience ('A') (Saward, 2010: 37).

Using this formulation, Saward describes how an MP might make a representative claim:

> The MP (maker) offers himself or herself (subject) as the embodiment of constituency interests (object) to that constituency (audience). The referent is the actual, flesh-and-blood people of

the constituency. The object involves a selective portrayal of constituency interests (Saward, 2010: 37).

The formal electoral process – the winning of an election – is the legal and procedural basis for the MP's claim to representation, but this only tells part of the story. During the election campaign, and while in office, politicians make claims setting out who they represent and how. The acceptance of these claims is an agreement by the represented that their politician does indeed represent them. The question of what is, or is not, in the interests of those represented is explored and refined through the making and accepting (or rejection, or ignoring) of claims. There is no pre-determined spatial, temporal or other boundary to the claim. Politicians can claim that it is in the interests of the people they represent, to consider the needs of future generations, citizens of distant countries or, indeed, other species. Neither is representation limited to the formal political sphere. Any individual or group can make a claim to representation. Saward gives the example of the singer Bono claiming to represent people in Africa who, Bono asserts, 'have no voice at all' (quoted in Saward, 2010: 83; see Montanaro, 2012, for a discussion). These claims to representation interact with, shape and are shaped by the claims made by elected representatives.

Saward's theory has been used in particular to analyse representation in the European Union, whose institutions work alongside, but do not replace, national legislatures, thereby raising problems of complexity and legitimacy (see, for example, de Wilde, 2013). The UK's referendum decision to leave the European Union could, at its simplest level, be seen as UK citizens rejecting representative claims made by European institutions.

The theory of the representative claim has much in common with the concept of 'framing' discussed in political science, the process by which politicians shape an issue to fit with political ideology, the positions held by voters and other actors and prevailing political norms (Benford and Snow, 2000; Lockwood, 2011). This is discussed further in the conclusion.

Representation and Climate Change

As discussed above, the concept of the representative claim is a useful way of thinking about action on climate change. Climate change is certainly a challenge in representational terms: it is something that affects all humans, and all species, but to differing degrees and over different timescales. Climate change is not immediately 'knowable' but is mediated through scientific evidence and modelling and is understood in different ways by different groups (Hulme, 2009). Given the ubiquity of fossil fuel use, agricultural practices and other land use which results in emissions of greenhouse gases, nearly all humans contribute to the issue and will also be affected by any attempts to curb emissions (although causes and effects of climate change are distributed very unevenly in global terms). Climate change is both local and global, both immediate and long-term, both personal and systemic. In representational terms, there is no simple answer to questions about who should represent or act on behalf of whom.

The scientific community stresses that reductions in greenhouse gases are urgently needed to avert the worst effects of climate change (IPCC, 2014). As a result, a high-profile group of scientists is making the case for a new approach to governance, termed 'planetary stewardship' (Steffen et al., 2011). They argue that human interference in crucial

earth systems, including the climate system, must not go beyond certain boundaries, and advocate for a system of governance which enables humanity to keep within these limits: 'the need to achieve effective planetary stewardship is urgent' (Steffen et al., 2011: 739) and 'can be built around scientifically developed boundaries for critical Earth System processes' (Steffen et al., 2011: 757).

In advocating this approach to governance, scientists are, in effect, making a representative claim. While they do not explicitly argue against democracy, they contend that 'planetary stewardship' is a precondition of human society (and, within that, the political system); thus, it is something that *must* be done. The question of *how* it is done is left unspecified, save for generalised references to governance. Andrew Dobson (2010: 765) describes this approach as playing 'a card that will trump political debate and discussion'. Yet, to the extent that action relies on legislation or policy change, scientists remain dependent on formal political processes to achieve their aims. Scientists can make a claim that they represent humanity's future, but their claim needs to be accepted, by national legislatures and publics alike, if it is to be successful.

Meanwhile, public concern about climate change has low salience compared to other issues. A recent review of evidence states that:

> … climate change is invariably not the highest or most important priority for many people … Other global/societal issues (e.g. world poverty, crime, terrorism, and war), environmental issues (e.g. water pollution), or personal issues (e.g. health, finances, and relationships) have a higher expressed importance for them (Pidgeon, 2012: s87).

There is some evidence to suggest that climate change is a 'valence' issue, one which voters expect politicians to act on, even though they do not identify it as a priority (Lockwood, 2013). Thus, politicians are faced with generalised concern about climate, but little guidance as to what action voters would like to see. How should a politician respond if scientists call for urgent action, but publics, including those whose votes they depend upon, do not prioritise climate action? How can they develop a strategy that achieves the necessary emission reductions while resonating with publics and building support for further action? In other words, the task is to develop representative claims on climate change. What might such claims look like? This question is examined empirically, below, through analysis of interviews with UK politicians.

Method

The interviews used a narrative approach (Riessman, 2005), aiming to elicit description and storytelling – the politician telling their own story of their work and life. Participants were informed that one of the purposes of the study is to find ways to better support politicians in their work on climate change. Thus, the interviews were presented as a collaborative discussion (Morris, 2009; Oakley, 1988), a joint investigation by the researcher and the researched.

MPs were recruited through an email invitation from the researcher, setting out the collaborative nature of the project, as a joint initiative between Green Alliance and Lancaster University. Basic information was provided about the research question and the interview itself. A total of 22 MPs were approached, to secure the 14 interviews. Given the methodological stance, the number of interviews was limited, to allow detailed qualitative analysis (Kvale and Brinkmann, 2015). Within these constraints, participants were

Table 1. Interviewees' Background and Experience.

Gender	9 males, 5 females
Party affiliation	6 Conservative, 6 Labour, 2 Liberal Democrat
Time served as MP	Between 1 and 19 years' work as an MP; mean = 6.4 years
Current status	8 sitting MPs; 6 former MPs, who left office in 2010 or 2015
Seniority	4 interviewees had served in government; 2 had served on the opposition frontbench; 8 were backbenchers, most with experience on Select Committees
Record on climate change issues	7 with some record of activity on climate change issues (judged through speeches in Westminster and elsewhere); 7 with little or no activity

Participants were not asked for additional demographic data, for example, age or ethnicity

selected to provide a balance of age, gender, political party, and length of time served as an MP (see Table 1). Both current and former MPs took part; some differences were noted between these two groups, with former MPs tending to be more reflective and less focused on the practical difficulties of working life.

Participants' previous involvement in the issue of climate change was investigated. There was a wide spectrum of involvement, as evidenced by participation in events or speeches. Known 'climate sceptic' MPs (defined as those who publicly state that they do not accept the scientific consensus, as represented by the IPCC (2014)) were not approached. This is because the research question focuses on how MPs try to understand and act on climate change, rather than the reasons for rejecting the issue altogether. A different research strategy would be needed for this group. These 'climate sceptics' are influential, although they are small in number. Only five MPs out of 659 voted against the Climate Change Act in 2008, although opposition to climate action has increased in subsequent years (Carter, 2014).

The interviews began with a short description of the study, and discussion of ethical issues including consent and anonymity. Interviews were audio recorded and transcribed by the researcher. Interviews were semi-structured and designed to be informal and conversational. First, participants were asked to reflect on the way that they work and the influences and pressures upon them. Questions were then asked specifically about climate change: the extent to which the issue is discussed in Parliament and how it is discussed, and whether or how they work on the issue. The term 'climate change' was deliberately not defined by the interviewer, with interviewees free to interpret it as they wanted, with some talking more about climate science and international co-operation and others discussing action at local level. This basic framework was used for all interviews, although emphasis varied. Most interviews were 30–40 minutes long, but a number were considerably longer, and one lasted only 20 minutes.

Interview data were transcribed and analysed through coding using NVivo software and through critical reading of the scripts. The data showed differences between interviewees, with party affiliation, social background, gender, age and previous experience all playing a part, as can be expected from previous research (see, for example, Carter (2013) on party strategies and research described earlier (McKay, 2011; Puwar, 2004) on gender). Younger MPs, for example, were more likely to be influenced by the positions taken by their seniors (this is discussed further in Willis, 2017a). However, these differences were not clear-cut, and there were many commonalities. The analysis presented

below does not categorise according to party, age, gender or other 'standard' category, but discusses the different sorts of claims made by the group of MPs as a whole. In the conclusion, some differences based on political ideology are discussed.

The interviews were designed to investigate how MPs address climate change, in general terms. The issue of representation was a subject that was raised by each interviewee, in different ways, as discussed below. Other themes to emerge were questions of identity – how politicians see themselves and their role, and discussion of the pressures of working life. These findings are published elsewhere (Willis, 2017a).

While this study investigates the positions of individual MPs, it is important to note that the stance of a particular government, or political party, is not simply the sum of individual MPs' stances. In the UK system in particular, the executive has far-reaching powers and influence, memorably dubbed an 'elective dictatorship' by Lord Hailsham (Byrne and Weir, 2004), with backbenchers having a limited role in national policy formulation (Norris, 1997). Thus, this study cannot claim to offer a full explanation for the stance of government or particular parties. Studying elected MPs can, however, offer insights into the dilemmas of representation and how this can be reconciled with action on climate change or indeed other issues.

Interviews were held anonymously, and this was crucial in building a picture of their private deliberations. In this context, assuring anonymity for public figures requires a more robust approach than just changing names (Saunders et al., 2015). Therefore, the amount of context given to the data in this article is limited.

MPs' Representative Claims on Climate Change

This set of interviews shows that climate change poses a dilemma for politicians trying to carry out their representative function. Interviewees acknowledged that action on climate change is necessary (though their understanding of, and commitment to, the issue varies). Yet, they report consistently that they feel little or no pressure from the people they see themselves as representing, to work on climate issues. Thus, if they are to speak or act on the issue, they must work to construct a 'representative claim', demonstrating how their work on climate change can be justified in terms of their role as an elected politician.

Below, politicians' deliberations on climate change and representation are presented in three steps. First, their understandings of the need for political action on climate change are discussed. Second, their attitudes towards their representative role in general are considered. Third, these two elements are joined, to discuss how politicians reconcile representation and climate action and to discuss how they make representative claims on the issue. Four types of claim are identified, each of which portrays climate change, and the responses needed, in a different way.

Understanding the Need for Political Action on Climate Change

All the interviewees in this study stated that action by politicians on climate change is needed, although there were a wide range of views on the importance and urgency of the issue. (Note that, as described above, known 'climate sceptic' MPs were not interviewed.) When asked about their awareness of the issue, responses included:

> It's just been [there] … I don't remember not caring about [it].

The first big memory I obviously have of it is Kyoto [the first international climate treaty, signed in 1997] … and then it became an increasing issue rising up the agenda.

Some distanced themselves, saying that they did not understand the issue enough:

I'm not an expert on it, it's still a very complicated subject.

The majority, however, showed what might be termed passive or conditional support. For example, one interviewee explained that she knew it was important, and part of the wider agenda of her party and political outlook, but that it was not something that motivated her:

It probably falls into the basket of general progressive issues that sound good to ensure … It's not why I went into politics.

A minority of interviewees saw climate change as a crucial issue to address, one describing its potential impact graphically as we sat in the House of Commons:

Where we're sat right now might well be underwater, right next to the Thames. I wouldn't fancy our chances.

Whatever their own views, all interviewees agreed that the issue was not much discussed in parliament. Comments included:

It's not the number one issue that's talked about here.

I don't really recall it coming up a lot.

It's just not part of the daily discourse, it's too far away.

Two interviewees made the distinction that it had been talked about more in previous administrations, particularly around the time of the Climate Change Act, passed in 2008:

There was a lot of passion, a lot of commitment, a lot of concern … and I feel it has completely disappeared.

As a mainstream political issue, your top five, I think it's died. Which is bizarre given that it's the greatest challenge facing the planet.

All interviewees reported that the issue was seldom or never raised by the constituents they meet in their surgeries, on the doorstep when campaigning or in day-to-day encounters:

I've knocked hundreds, literally thousands of doors, and had tens of thousands of conversations with voters … and I just don't have conversations about climate change.

I can't remember the last time I was asked about climate change. It's very rare to be asked about it.

Some reported a minority within their constituency who raised climate change, normally as part of a broader set of issues concerning environment and social justice. This was particularly the case for those who represented wealthier constituencies, with a core

of what one MP described as 'articulate, affluent people who have perhaps a particular type of worldview'. Another described this group as a vocal minority:

> It's an unusual city, it's got its Guardian-reading intelligentsia, who are engaged … And yes, we know from the emails they send that climate change is one of the issues of concern, but to be honest, I'm quite interested in the other eighty-seven thousand people, and particularly working class people, who are not going to be engaged in the issues, but are concerned about whether their kids can get to school or whether the hospital is operating.

Politicians are adept at understanding different segments of opinion and social position within their local area, as one explained:

> I've begun to think too much like a market researcher, you know, there's the segment of the population for whom it [climate change] matters more than others.

Thus, while some MPs felt pressure from a minority of their electorate to act on climate change, none reported a significant mandate from their constituency.

Demonstrating Representativeness

All the interviewees in this study stressed the need to consider their constituency and relate their work to local people. In keeping with Saward's theory, politicians rely to a certain extent on the formal system of constituency representation to justify their position, but this does not mean that they take their 'representativeness' for granted; they feel the need to demonstrate it through words and action. This is in part due to the UK electoral system, in which each politician represents a specific geographical area. Previous research suggests that this constituency role has become more important over time. In the 1950s, MPs rarely visited their constituency (Norton, 1994), whereas all interviewees in this study highlighted their local links. One described 'the incredibly real emotional pressure you feel from your constituency'. She used metaphors of family to explain this:

> It is really unbelievably strong. It's almost like being a parent. It's got the sort of joys and terror associated with that type of emotional connection. And so you see everything through the prism of how it will go down locally, and if you're properly connected you will in a sense become your constituency, and you will walk in time to it.

While all felt the need to demonstrate that they were working on behalf of their constituents, they differed in the degree to which this dominated their working life. Newly elected MPs felt a strong need to prove their connection, as one explained: 'I say my priority is to stand up for my constituency, putting forward things in my constituency, to make it better, to attract funds, to improve productivity'. Those who represented marginal seats, too, felt under a greater degree of pressure. One contrasted the 'luxury' of a safe seat with the perils of representing a marginal:

> [there is] a sort of a luxury that comes with a safer seat … you can say well ok I care about, whatever, and make that your mission in life to change the world on one particular issue. Whereas when you're in a more marginal seat you don't feel like that. You feel like you have to be doing a little bit of everything, to prove to everybody that you're a generalist, not a specialist.

Previous research has suggested differences between parties in the degree to which MPs are led by the electorate's views. For example, Philip Norton argues that Conservatives are more likely to characterise their role as 'acting in the best interests of the people' (Norton, 2012), which, they argue (following Edmund Burke (1774)), requires a degree of autonomy; Labour and the Liberal Democrats are more likely to respond directly to concerns of current voters. This did not hold true for the limited sample of MPs interviewed in this study, with all MPs claiming to represent their constituency in a direct sense, although how they did this differed across parties and is discussed in the conclusion.

While the needs of their constituency influenced all the interviewees, other factors were influential too: their own background, views and values; the priorities of their party, which they must be seen to address; parliamentary business, such as the legislative agenda, and any specific role as a minister, spokesperson or committee member.

A 'License to Talk': Building a Representative Claim on Climate Change

As the discussion above shows, if politicians are to address climate change, they must find a strategy which appeals to, or at the very least does not conflict with, the people who they see themselves as representing. In Saward's language, they must construct a 'representative claim'.

MPs' reflections in interviews support Saward's (2010: 8) description of representation as 'a dynamic process of claim-making and the reception of claims'. Interviewees spoke explicitly about their efforts to present issues in ways that would appeal to their electorate and serve their interests. One, for example, representing an affluent rural constituency, described how she married her own environmental interests with her constituents' concerns about planning issues. She said that these concerns 'gave me a bit of a license to talk about environmental issues'.

On climate change, interviewees discussed the ways in which it was possible to address the issue, despite reporting low levels of interest or awareness: through building a representative claim on climate change and developing an account of how a certain course of action would serve the interests of those they claim to represent. Below, four such claims are analysed. They are presented as separate, static claims, but in practice, as discussed in the conclusion, politicians may use different claims in different circumstances, as part of a dynamic exchange between representative and represented.

A Cosmopolitan Claim. As a global issue, it can be argued that climate change requires a global response; this is the approach taken in the cosmopolitan claim. These MPs argue that it is in the interests of the global community (including, of course, their own country and constituency) to take action. Thus, their representative claim reaches far beyond their local area; they see themselves, alongside others, as representing the global community. In the words of one interviewee, a former MP:

> I often started off with that sort of fairly internationalist viewpoint … a lot of the impacts of climate change are going to hit other places before they hit here. [My constituency] is not likely to be one of the first places to be hit particularly badly. So what? I just happen to be here.

This is a cosmopolitan claim because it explicitly states that a global viewpoint is needed. In putting forward such a claim, this politician is positioning himself within a wider group of climate advocates, including, for example, politicians in other countries,

civil society leaders, and climate scientists. Thus, this claim extends beyond representing the interests of one particular constituency and assumes a more global significance.

While a cosmopolitan claim has the advantage of reflecting the global nature of the issue, if it is to be successful, any claim must be accepted, rather than being rejected or ignored, by its intended audience. The same politician described the limitations of his claim: the audience is limited because in his view, few people think in such abstract, global terms. Such a claim will not appeal to:

> … people who fundamentally care about themselves, their environment, their friends, their local space. They've never been to Bangladesh, they've never met a polar bear … We have these sort of massive big things about what will happen in other parts of the world about bits of Africa drying, about these species, and they're like, 'yeah, ok, whatever'.

Another interviewee also pointed out the limited appeal of a cosmopolitan claim, contrasting it with an appeal to local interests. In conversation with the interviewer, he stressed the impact that a visit to Bangladesh, to view climate impacts first-hand, had had on him. Yet, he hesitated to use this to make a case with constituents:

> We've got to be able to take people to Birmingham, not just Bangladesh … Bangladesh is going to motivate some people, I actually did go to Bangladesh as well, and it did have an impact on me, but you know, it just feels, it's just not going to be enough.

As this shows, even those interviewees who put forward a cosmopolitan claim acknowledged its limitations. A further difficulty with this claim is that it is not directly linked to particular strategies or actions. It is difficult to relate a generalised claim of this sort to specific practical initiatives. Because of these drawbacks, all interviewees stressed the need to ground a claim in a local area and make the links to local people and issues. Two strategies were suggested for doing this: a local prevention claim and a co-benefits claim.

A Local Prevention Claim. In this formulation, MPs make the case that acting on climate change is in the interests of their local area because taking action will prevent the worst effects of climate change. This tailors the claim more explicitly to a local setting. One MP described how discussions of climate change are prompted by extreme weather events such as floods:

> There are peaks of anxiety about climate change when there is severe flooding … people do suddenly say, oh crumbs, you know this climate change thing is really terrible, inevitably the people affected are worried about how they've been affected, understandably. So people are like, 'argh, climate change', and then everything sort of runs round for a bit, and you can, then its kind of dies away.

In this example, the interviewee is seeing events like floods as a chance to make the claim that action on climate change is necessary and desirable, but she is also pointing out the fleeting nature of such opportunities. Another interviewee explained how he deliberately stresses the risks of flooding, although he himself is more concerned about other impacts, because he saw it as a useful way of making a case:

> I talk for example quite a bit about … domestic flood risk. I don't see it as one of the biggest consequences of climate change, in reality, but 'your house is going to flood if we keep doing

this and you will not be able to get insurance for it, so we need to do something about it' … is a powerful message.

Making a claim based on local impacts, and the need to prevent the worst impacts, has the advantage that it links a global issue directly to the local area, and allows a politician to claim that it is in the interests of the area that he or she represents, to take action on climate. However, as with the cosmopolitan claim, it does not link directly to a case for local action to reduce greenhouse gas emissions, though it bolsters the case for measures to adapt to climate change, such as flood prevention strategies.

A Co-benefits Claim. The most common strategy that interviewees reported was linking climate change to practical, achievable local actions, particularly economic measures, such as encouraging renewable energy generation, or improving transport infrastructure. This has the obvious advantage of relevance to the local area. The politician can claim that they are acting in the interests of the local area while also tackling a global issue. Thus, action on climate change has local co-benefits. Interviewees talked about examples of this:

> I've just been to see a guy in my constituency, a car-related company, they've done it [saved energy], and it's saving them money. So those are the messages, those are the ways of doing it, so it doesn't seem a negative thing.

> In [my area], the green economy, the offshore wind, presents an opportunity.

> I know in my constituency about a community energy company … which is great and interesting and very innovative, and hopefully that will start to generate some interest.

> I'm happy to use an economic argument if that means that more people will come on side … I change the language to be much, much less extreme.

As the last example shows, presenting climate action as a manageable, locally beneficial initiative is a tactic used by politicians to build support. A co-benefits claim involves promoting a tangible local strategy, in order to represent the interests of the local area, as well as wider interests. The disadvantage of such a claim, though, is that it may reduce the opportunity to discuss the full implications of climate change, focusing on small steps at a local level.

A Surrogate Claim. The co-benefits claim, described above, promotes local benefits while acknowledging the global nature of climate change. It grounds climate action in a particular locality. By contrast, a surrogate claim simply promotes local benefits, *without* reference to climate change. In this case, although the politician himself or herself is thinking of a particular strategy in terms of its climate benefits, they deliberately do not mention this. Instead, they only talk about local benefits, such as reduced congestion, or cost savings. These MPs, a significant minority among interviewees, think that mentioning climate change or carbon reduction would be unpopular, and therefore counter-productive. They judge that an explicit representative claim on climate change, such as the claims described above, would not be accepted by its intended audience. Two interviewees explained how they articulated their support for local transport schemes which they privately thought would reduce carbon emissions, without mentioning this:

> I would rather not say a word about climate change and stop the [local road] being ten lanes,
> than make a really good case about climate change and have a ten lane bloody superhighway
> next to us.

> If I had mentioned carbon emissions, I would have been … there would have been a rolling of
> eyes and saying, 'oh here he goes again'.

Interviewees explained that they use this strategy because they see it as the only way to bring about the action required. When pushed to explain, one interviewee not only acknowledged the significance of climate change but also stressed the lack of support, within their party and with voters, hence the strategy of pursuing a surrogate claim:

Interviewee:	Climate change in my own party is toxic. There's no need to talk about it.
Interviewer:	to look at it from a different perspective, you and I both know the science of climate change, we know that going to two degrees, three degree warming is a really serious thing which affects the whole way we live our lives.
Interviewee:	yes
Interviewer:	why can't you talk about that?
Interviewee:	because unfortunately, as is always the way in most of these issues which are contentious … you won't take people with you politically.

The last phrase here is telling: 'you won't take people with you politically' emphasises that, in his judgement, there is no audience for a representative claim which is explicitly about climate change.

Conclusion

Analysis of these interviews shows that it is not straightforward for a politician to make a case for why, as an elected representative, he or she should support action on climate change. As a complex, mediated, global issue, the links with everyday lives of voters are not self-evident. As one interviewee memorably said, 'you don't say someone came to my surgery with climate change coming out of their ears'. They found it harder to make a claim on climate than other issues, such as supporting local services or providing job opportunities. However, politicians know that it is an issue requiring political attention, and so they find ways of building a representative claim, constructing a case for why they should be advocating climate action. Table 2 summarises the four contrasting representative claims on climate change, using Saward's (2010) formulation.

Politicians do not necessarily choose one claim over another; they may use different claims in different circumstances. The cosmopolitan claim appeals to a global community and local people who see their lives within a global context – for example, supporters of development organisations (Desforges, 2004). The local prevention claim has more immediate resonance for local communities and businesses, particularly in areas at risk from extreme weather events such as flooding. A co-benefits claim on climate change is widely used, not just by politicians but by business organisations and other climate advocates; it can be seen as part of the wider framing of environment as a process of 'ecological modernisation' (Hajer, 2000). In the UK, the Stern (2007) Review was commissioned by the Labour administration to formalise the economic case for action on climate. The surrogate claim is more likely to appeal to right-of-centre voters who, as other research

Table 2. Forms of MPs' Representative Claim on Climate Change, Following Saward (2010).

	Form of claim	Maker	Subject	Object	Audience
Cosmopolitan claim	'we must tackle climate change in the interests of this local area and all humanity'	MPs	All politicians	The global community	Particular interests within the constituency, media and other organisations
Local prevention claim	'The nation and this local area must act to prevent climate impacts, such as floods, in our area'	MPs	MPs and other local stakeholders	The electoral constituency, with a particular focus on those at risk from climate impacts, for example, floods	The electoral constituency
Co-benefits claim	'We need action to reduce carbon emissions, as it will benefit the local economy and society, as well as helping to combat climate change'	MPs	MPs and other local stakeholders	The electoral constituency, with a particular focus on economic stakeholders, for example, businesses	The electoral constituency and wider
Surrogate claim	'Saving energy and promoting energy security brings benefits to our local area'	MPs	MPs and other local stakeholders	The electoral constituency	The electoral constituency and other local and national stakeholders

(Whitmarsh and Corner, 2017) suggests, are most likely to be sceptical of the need for climate action.

Aware of these differences, politicians in this study used different types of claim for different audiences and at different times – such as the interviewee quoted above, who used a flood as an opportunity to discuss climate impacts in his constituency, or other interviewees who said that they would use a 'co-benefits' type claim when addressing a business audience. Previous work in political science also highlights this strategy. Richard Fenno's (1977) classic account of 'home style' details how US Members of Congress tailor their presentation according to their audience; Michael Saward (2014) describes the 'shape-shifting representative'. Whereas it is often assumed that a politician who changes their position or presentation according to the situation is unprincipled, inconsistent or maverick, Fenno, Saward and the evidence from this study would suggest instead that such crafting of claims and positions is part of the everyday job of the representative.

In crafting representative claims, politicians find ways to put climate change onto the political agenda, offering it up in ways that are politically meaningful to the people they represent. However, in doing so, they risk downplaying the nature of the threat, negotiating it into something more acceptable to their audiences. Analysis of parliamentary speech also demonstrates a tendency to 'tame' climate change (Willis, 2017b). Yet, climate change, as a planetary phenomenon, cannot be negotiated away. As the US commentator Bill McKibben (2015: 1) puts it, 'Physics doesn't negotiate. Physics just does'.

Politicians' reluctance to confront the more far-reaching implications of climate change may not just be because they do not feel that they can construct a valid representative claim but also because their own life experience, and indeed the development of human societies and political systems over thousands of years, has been carried out against the backdrop of a stable climate (Clark, 2011). The far-reaching changes to earth systems threaten this stability (Steffen et al., 2011). In this context, the task for politicians is to develop representative claims which acknowledge the profound implications of climate change while crafting responses that resonate with those that they represent.

The Theory of the Representative Claim

As this analysis shows, conceptualising representation in terms of the making and accepting of representative claims helps in understanding how politicians can reconcile their representative role with their position on particular issues. It provides an account of the creative ways in which politicians make the case for their agenda, even when, as in the case of climate change, it may not be an issue on which the local electorate is demanding action. It overcomes the vexed questions of whether politicians can or should represent nature or other species, people beyond their constituency and over the long-term rather than a single electoral cycle. The answer is deceptively simple: they can, and should, if they can make a representative claim which is accepted. Implicit in the theory, however, is the idea that some claims are harder than others to sustain; a claim like the cosmopolitan claim identified here, based on the long-term interests of a globalised humanity, will find it more difficult to gain traction than a claim which represents immediate local interests. Thus, the theory provides a nuanced account of the way in which politicians conceptualise their role as a representative.

However, an approach might risk under-emphasising the structures and processes of representation. Electoral systems undoubtedly affect the way in which politicians work. Comparative studies of environmental policy across different legislative systems show the influence of different governance arrangements (e.g. Lachapelle and Paterson, 2013; Schaffer and Bernauer, 2014). As demonstrated by these interviews, the UK's constituency-based system is an influential factor in politicians' conceptions of representation. As a study by Lizzeri and Persico (2001) suggests, systems of proportional representation may encourage politicians to appeal to a wider group. It may be that changes to institutional structures or electoral systems might encourage better consideration of complex, global issues; this discussion might be downplayed if too much emphasis is placed on representation as a claims-based construct.

Directions for Research

The research did not set out specifically to examine differences between different political parties and beliefs, though this is undoubtedly of huge significance. For example, a cosmopolitan claim ties closely to liberal conceptions of internationalism and global solidarity, emphasised by Liberal Democrat interviewees in this study; as highlighted above, a surrogate claim is often used with right-of-centre voters. Further research with politicians from different political traditions would help to build a clearer picture of the way in which political ideology shapes representative claims on climate change.

This research has focused on the politicians themselves. However, as Saward points out, politicians do not have a monopoly on representation or, indeed, on politics. Indeed,

Bruno Latour draws on the pragmatist tradition in US political thought to focus on attention on the ways in which issues become political. They ask how something becomes a 'matter of concern' (Latour, 2004) for certain publics, how the issue is articulated and whether or how it enters the formal political arena. A flood, for example, may just be seen as a weather event, with no attendant politics. However, if local people believe that official agencies could have prevented flood damage through better flood defences or warning systems, flooding may become a 'matter of concern', a political issue, as people articulate a problem and advocate solutions (Whatmore and Landström, 2011). This may, in turn, be taken up within the formal political sphere, if politicians support, deny or redefine claims.

Following this, most interviewees pointed to issues which had become 'political', thanks to deliberate campaigns by local people, or pressure groups. An example of this is the campaign to protect bees, mounted by Friends of the Earth and other environmental groups. As one interviewee wryly remarked, 'without in any way undermining the importance of bees, you know we get more letters on bees than on anything else'. Another politician criticised environmental groups for failing to build a public mandate on climate, saying 'we're never going to be able to carry this on a sustained basis if we don't have the public support', and contrasting with groups supporting overseas development, who, in his view, ensured that 'there were still cheerleaders for that policy in the public'. There would be merit in research examining the ways in which politicians and other political actors work together, whether in an orchestrated way or informally, to develop and sustain representative claims.

As discussed above, while the analysis here has not focused on processes or institutional considerations, their importance should not be neglected. It may be that more widespread use of deliberative processes, for example, would help politicians to develop their mandate on climate change (Dryzek and Niemeyer, 2008). Reforms which allow long-term considerations to be brought into politics could also be considered (Jacobs, 2011; Urry, 2016). This research was limited to UK MPs, elected through a first-past-the-post constituency-based system. Comparisons could be made to other electoral systems, such as proportional representation, to consider the relationship between claims-making and the formal architecture of electoral systems. Last, backbench MPs, particularly in the UK system, have limited influence on government agendas (Norris, 1997); further research could investigate the representative claims made by governments or political parties.

Supporting Politicians to Speak and Act on Climate Change

This research points to ways in which politicians, individually and collectively, could be supported to develop a comprehensive political response to climate change. First, it is important for climate advocates, including scientists and campaign groups, to acknowledge the complexities of the politician's role. Politicians must understand the climate issue and its implications, and craft it into an issue, or issues, which they feel will garner support: they must develop representative claims. Scientific evidence in and of itself is not a motivator, as scholars of science and technology studies have long argued (Wynne, 2010). Individual politicians feel constrained in acting on climate change, but some nonetheless find ways of building a claim, a way of legitimising their work in this area.

Second, climate advocates should understand that representation is not a matter for politicians alone. As discussed above, representation stretches far beyond formal politics. Advocates can develop and shape representative claims which politicians can join and

modify. Climate advocates could use the typology of representative claims on climate to consider how to support politicians and, indeed, how to develop their own representative claims.

For example, a 'prevention claim' could be developed as a time-limited strategy, around the time of extreme weather events such as floods or drought linked to climate change. A co-benefits claim can be used on a local or regional basis; indeed, there are many examples of local areas promoting the benefits of a 'low-carbon economy', which in turn helps local politicians to make a case for action. Greater Manchester, for example, has established a 'Low-Carbon Hub', which describes its aims as 'reftrofitting our homes and workplaces, developing more low-carbon skills, building our renewable energy capacity and energy efficiency and helping the low carbon business sector flourish and grow' (Greater Manchester Low Carbon Hub, 2017).

At the most fundamental level, those holding a moral position that representative democracy is desirable, while also understanding the scientific evidence that urgent action on climate is necessary, must find ways to reconcile representation and climate change. In the words of one politician in this study, 'the idea that you can somehow ignore the electoral result when setting your expectations of what government might do is profoundly undemocratic'.

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References

Benford RD and Snow DA (2000) Framing Processes and Social Movements: An Overview and Assessment. *Annual Review of Sociology* 26: 611–639.

Burke E (1774) Speech to the electors of Bristol. Available at: http://oll.libertyfund.org/titles/burke-select-works-of-edmund-burke-vol-4 (accessed 26 June 2017).

Byrne I and Weir S (2004) Democratic Audit: Executive Democracy in War and Peace. *Parliamentary Affairs* 57 (2): 453–468.

Carter N (2013) Greening the Mainstream: Party Politics and the Environment. *Environmental Politics* 22 (1): 73–94.

Carter N (2014) The Politics of Climate Change in the UK. *Wires Climate Change* 5 (3): 423–433.

Clark N (2011) *Inhuman Nature: Sociable Life on a Dynamic Planet*. Los Angeles, CA; London: SAGE.

De Wilde P (2013) Representative Claims Analysis: Theory Meets Method. *Journal of European Public Policy* 20 (2): 278–294.

Desforges L (2004) The Formation of Global Citizenship: International Non-Governmental Organisations in Britain. *Political Geography* 23 (5): 549–569.

Dobson A (2010) Democracy and Nature: Speaking and Listening. *Political Studies* 58 (4): 752–768.

Dobson A and Hamilton L (2016) Representation and Political Theory. *European Political Science* 15: 570–578. Available at: http://link.springer.com/article/10.1057/eps.2016.1 (accessed 6 September 2016).

Dryzek JS and Niemeyer S (2008) Discursive Representation. *American Political Science Review* 102 (4): 481–493.

Fenno Jr R (1977) U.S. House Members in their Constituencies: An Exploration. *American Political Science Review* 71 (3): 883–917.

Giddens A (2009) *The Politics of Climate Change*. Cambridge: Polity.

Greater Manchester Low Carbon Hub (2017) Greater Manchester Low Carbon Hub. *Greater Manchester Low Carbon Hub*. Available at: http://gmlch.ontheplatform.org.uk/ (accessed 26 June 2017).

Hajer MA (2000) *The Politics of Environmental Discourse: Ecological Modernization and the Policy Process*. Oxford: Clarendon Press.

Hulme M (2009) *Why We Disagree About Climate Change: Understanding Controversy, Inaction and Opportunity*. Cambridge ; New York: Cambridge University Press.

Intergovernmental Panel on Climate Change (IPCC) (2014) *Climate Change 2014: Mitigation of Climate Change*. Cambridge: Cambridge University Press.

Jacobs AM (2011) *Governing for the Long Term: Democracy and the Politics of Investment*. Cambridge: Cambridge University Press.

Kvale S and Brinkmann S (2015) *Interviews: Learning the Craft of Qualitative Research Interviewing*. Los Angeles, CA: SAGE.

Lachapelle E and Paterson M (2013) Drivers of National Climate Policy. *Climate Policy* 13 (5): 547–571.

Latour B (2004) Why Has Critique Run out of Steam? From Matters of Fact to Matters of Concern. *Critical Inquiry* 30 (2): 225–248.

Lizzeri A and Persico N (2001) The Provision of Public Goods Under Alternative Electoral Incentives. *American Economic Review* 91: 225–239.

Lockwood M (2011) Does the Framing of Climate Policies Make a Difference to Public Support? Evidence from UK Marginal Constituencies. *Climate Policy* 11: 1097–1112.

Lockwood M (2013) The Political Sustainability of Climate Policy: The Case of the UK Climate Change Act. *Global Environmental Change* 23: 1339–1348.

McKay J (2011) 'Having it All?' Women MPs and Motherhood in Germany and the UK. *Parliamentary Affairs* 64 (4): 714–736.

McKibben B (2015) McKibben to Obama: We Can't Negotiate Over the Physics of Climate Change. *Grist*. Available at: http://grist.org/climate-energy/mckibben-to-obama-we-cant-negotiate-over-the-physics-of-climate-change/ (accessed 14 July 2017).

Mansbridge J (2003) Rethinking Representation. *American Political Science Review* 97 (4): 515–528.

Montanaro L (2012) The Democratic Legitimacy of Self-Appointed Representatives. *The Journal of Politics* 74 (4): 1094–1107.

Morris ZS (2009) The Truth About Interviewing Elites. *Politics* 29 (3): 209–217.

Norris P (1997) The Puzzle of Constituency Service. *The Journal of Legislative Studies* 3 (2): 29–49.

Norton P (1994) The Growth of the Constituency Role of the MP. *Parliamentary Affairs* 47 (4): 705–721.

Norton P (2012) Speaking for the People: A Conservative Narrative of Democracy. *Policy Studies* 33 (2): 121–132.

Oakley A (1988) Interviewing Women: A Contradiction in Terms. In: Roberts H (ed.) *Doing Feminist Research*. London: Routledge, pp.136–152.

Pidgeon N (2012) Public Understanding of, and Attitudes to, Climate Change: UK and International Perspectives and Policy. *Climate Policy* 12 (Suppl. 1): S85–S106.

Puwar N (2004) *Space Invaders: Race, Gender and Bodies Out of Place*. Oxford: Berg.

Rickards L, Wiseman J and Kashima Y (2014) Barriers to Effective Climate Change Mitigation: The Case of Senior Government and Business Decision Makers. *Wiley Interdisciplinary Reviews: Climate Change* 5 (6): 753–773.

Riessman CK (2005) Narrative Analysis. In: Roberts P, Kelly N, Milnes K, et al. (eds) *Narrative, Memory and Everyday Life*. Huddersfield: University of Huddersfield, pp.1–7.

Saunders B, Kitzinger J and Kitzinger C (2015) Anonymising Interview Data: Challenges and Compromise in Practice. *Qualitative Research* 15 (5): 616–632.

Saward M (2010) *The Representative Claim*. Oxford; New York: Oxford University Press.

Saward M (2014) Shape-Shifting Representation. *American Political Science Review* 108 (4): 723–736.

Schaffer LM and Bernauer T (2014) Explaining Government Choices for Promoting Renewable Energy. *Energy Policy* 68: 15–27.

Steffen W, Persson Å, Deutsch L, et al. (2011) The Anthropocene: From Global Change to Planetary Stewardship. *Ambio* 40 (7): 739–761.

Stern NH (ed.) (2007) *The Economics of Climate Change: The Stern Review*. Cambridge; New York: Cambridge University Press.

Underdal A (2017) Climate Change and International Relations (After Kyoto). *Annual Review of Political Sciences* 20 (1): 169–188.

Urbinati N and Warren ME (2008) The Concept of Representation in Contemporary Democratic Theory. *Annual Review of Political Science* 11 (1): 387–412.

Urry J (2016) *What Is the Future?* Cambridge ; Malden, MA: Polity Press.

Whatmore SJ and Landström C (2011) Flood Apprentices: An Exercise in Making Things Public. *Economy and Society* 40 (4): 582–610.

Whitmarsh L and Corner A (2017) Tools for a New Climate Conversation: A Mixed-Methods Study of Language for Public Engagement Across the Political Spectrum. *Global Environmental Change* 42: 122–135.

Willis R (2017a) How Members of Parliament Understand and Respond to Climate Change. *Sociological Review*. Epub ahead of print 12 September. DOI: 10.1177/0038026117731658

Willis R (2017b) Taming the Climate? Corpus Analysis of Politicians' Speech on Climate Change. *Environmental Politics* 26: 212–231.

Wynne B (2010) Strange Weather, Again Climate Science as Political Art. *Theory, Culture & Society* 27 (2–3): 289–305.

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Paper 5

The role of national politicians in Earth System governance

The role of national politicians in Earth System governance

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Abstract

The scientific case for Earth System governance has been made, but how does this fit with a
politician's mandate as a democratically elected representative? What role do national
politicians think they can and should play in the governance of earth systems? This paper
tests these questions empirically, using data from a study of UK politicians. A mixed-method
study of Members of the UK Parliament (MPs), including corpus analysis of political speeches,
a focus group of civil society advocates, and interviews with 23 MPs, investigated how
politicians understand and respond to climate change. Climate change provides a test for the
Earth System Governance concept, because a global goal to limit climate change has been
agreed through the 2015 Paris Agreement. Yet while the Agreement sets a clear goal, the
means to achieve it remain firmly at the level of the nation-state, with each country assuming
responsibility for its own national plan. Thus national administrations, run by elected politicians,
have a crucial role to play. Evidence from this study shows that, while many politicians have
an understanding of the challenges posed by climate change and wider changes to earth
systems, few have yet been able to operationalise this understanding into meaningful
responses at the national level. The study highlights two, linked, reasons for this. First,
politicians' ability to act – their agency – is limited by the practicalities and procedures of
everyday politics, and by the norms and cultures of their working life. Second, UK politicians
feel very little pressure from their electors to act on climate change, and have to work to justify
why action on climate change carries democratic legitimacy. The paper concludes with
recommendations for both research and practice. In terms of research, there is a need to
supplement the analysis provided by Earth Systems governance researchers, with a more
fine-grained, contextual understanding of the interplay between global goals and national
political systems. In terms of practice, politicians, working with other stakeholders, need
support in order to articulate the scale and significance of earth system challenges, and craft
responses which build democratic support for further action.

1. Introduction

I am sitting in a café in the House of Commons, right next to the River Thames, with a newly-elected politician. I ask him what he thinks about climate change. "It's terrifying", he replies. "Where we're sat right now might well be under water, right next to the Thames. I wouldn't fancy our chances." In my mind's eye, I picture a submerged Palace of Westminster, and I think that he may well be doing the same. "Why isn't that discussed much by politicians?" I ask. It is as if this question breaks the spell, and he veers away from the underwater palace, moving the discussion onto electoral cycles, the economy, the health service. We are back on firm ground.

There is a growing body of evidence (IPCC, 2014; Rockström et al., 2009) that human activity has influenced Earth's planetary systems to such an extent that the planet is entering a new and different geological era, the Anthropocene (Biermann et al., 2012). One of the most significant impacts is the change to the planet's climate system brought about by anthropogenic emissions of greenhouse gases (IPCC, 2014). Whereas earth's climate had a long and turbulent history before the arrival of our species, the past 11700 years, the Holocene era, has been remarkably stable. During this period, complex human societies have developed, with the advent of agriculture, large settlements, and more recently, nation-states, democratic government, industrialisation and globalised economic systems. As the planet moves out of the stable climate of the Holocene, into an era characterised by greater instability, the implications for human society are both profound and uncertain (Rockström et.al., 2009).

Better understanding of these changes has led to calls for governance of earth systems: purposeful, co-ordinated action by humans, aiming to limit changes to the climate and other earth systems, to allow human societies to continue and flourish. Prominent among these are the calls for 'planetary stewardship', which advocates a system of governance "built around scientifically developed boundaries for critical Earth System processes" (Rockström et.al., 2009:757), and the Earth System governance project, which calls for an expanded role for the United Nations organisations, to strengthen action at multilateral level, set global standards, and co-ordinate national action (Biermann et al., 2012).

The research presented here investigates how one particular influential group, national politicians, understand and respond to this challenge. What role do national politicians think they can play in the governance of earth systems? I begin with a discussion and critique of the Earth System governance literature. Following a description of the methodological stance, I present empirical data, using corpus analysis, a focus group of civil society advocates, and interviews with 23 Members of the UK Parliament (MPs) to examine the question of how national politicians respond to climate change. Finally, I discuss ways in which the Earth System governance approach could develop a better account of the national political context; and offer recommendations for how national politics could better accommodate action on Earth System issues.

2. Theoretical Framework: 'Earth System governance' and beyond

Below, the theoretical framework of Earth System governance is set out, and critiqued using insights from an interdisciplinary literature drawn from sociology, political science and theory, and science and technology studies. I argue that Earth System governance research and advocacy would be strengthened if more attention was paid to questions of agency, and to the need to develop democratic legitimacy. These ideas are further explored through discussion of climate politics in the UK, a country often seen as a leader, though recent policy implementation has stalled.

2.2 Earth System governance

Earth System governance is defined by one of its architects, Frank Biermann, as "the societal steering of human activities with regard to the long-term stability of geobiophysical systems" (2014:59). Research in this area is diverse, incorporating both natural and social sciences, but has a shared focus on the ways in which humans influence, and are influenced by, earth systems. Governance is understood as the process by which humans try to manage their impacts on earth systems, in order to ensure continued benign conditions for human societies. Much work in this area has been carried out through the Earth System governance project, launched in 2009 under the auspices of the International Human Dimensions Programme on Global Environmental Change, and now part of the Future Earth initiative (Future Earth, 2018).

Biermann stresses that Earth System governance has both an analytical and normative dimension. It is an analytical project, studying "the emerging phenomenon of Earth System governance as it is expressed in hundreds of international regimes, international bureaucracies, national agencies, local and transnational activist groups, expert networks, etc" (2014:59). It is normative, in that it proposes ways in which governance processes could be reformed, to better manage earth systems. For example, over thirty scholars from the Earth Systems governance project co-authored a paper in the lead-up to the 2012 United Nations Conference on Sustainable Development, putting forward nine areas in which, they argued, major governance reforms were needed. The paper concluded that

> Swift transformative structural change in global governance is needed. We need a 'constitutional moment' in the history of world politics, akin to the major transformative shift in governance after 1945 that led to the establishment of the United Nations… Earth system transformation calls for similar, if not even more fundamental, transformations in the way societies govern their affairs. (Biermann et al., 2012:57)

Similarly, the 2012 Planet Under Pressure conference, a gathering of over 3000 stakeholders including representatives from academia, business, media and Non-Governmental Organisations (NGOs), resulted in a "State Of The Planet Declaration":

Fundamental reorientation and restructuring of national and international institutions is required to overcome barriers to progress and to move to effective Earth-system governance. (Brito and Stafford-Smith, 2012)

Whilst research on Earth System governance has focussed on multilateral institutions, there is also analysis of state and non-state actors, including national and local government, NGOs, business stakeholders and citizens; and an assertion that governance is multi-layered and polycentric (Bernstein and Hoffmann, 2018; Kuyper et al., 2018).

2.3 Limitations of the Earth System governance approach

Summarising his call for improved Earth System governance, Biermann, while acknowledging the role of non-state actors and national governance, states that

Effective international cooperation must be a basis for Earth System governance in the Anthropocene. A concerted effort is needed to bring these institutions in line with the exigencies of the changed political context of Earth System transformation. (2014:60)

The reasoning behind this statement is clear. Earth systems must be managed through international co-operation. However, Biermann's statement also reveals two key limitations in the Earth System governance approach. The first of these is an insufficient account of agency. Who has responsibility, and power, to act? Biermann writes the phrase "a concerted effort is needed" in the passive voice, without indicating *who* is making the effort, on *whose* behalf. Similarly, the Planet Under Pressure declaration states that "fundamental reorientation and restructuring of national and international institutions is required" (Brito and Stafford-Smith, 2012:8), without stating *who* requires it, and *who* will bring it about.

Neither is the democratic legitimacy of such proposals discussed. There is an implicit assumption that democratically elected politicians will be involved in bringing about better governance, but there is no account of how those politicians might derive their mandate, or gain electoral support for a reform project of such magnitude. These two limitations, agency and democratic legitimacy, are discussed in turn below. The analysis is then applied to the case of climate governance specifically.

Agency: In its normative mode, Earth System governance research lays out a series of desired reforms to governance arrangements, at multilateral, national and local level (see, for example, Biermann et al., 2012). However, the process by which such reforms will be brought about is not made explicit. 'Governments' are often assumed to be the change-makers: "We urge governments to draw on the lessons of past treaty-making exercises" (Biermann et al., 2012:52); but there is also a more general call for change, encompassing existing multilateral institutions, governments at all levels, and other actors such as civil society organisations. Often, the passive voice is used, such as in the example cited earlier: "a concerted effort is needed".

Throughout, however, there is an assumption that it is possible for these actors to translate scientific evidence into appropriate, agreed responses. Maarten Hajer coins the phrase 'cockpitism' to describe the illusion that governance of earth systems can be managed in this way, by committed actors – pilots, in this analogy – assessing all the evidence at their disposal, and having the freedom to respond accordingly in order to steer the planet, as aeroplane, into a safe landing (Hajer et al., 2015).

Yet, in stark contrast to the cockpit analogy, the question of who the actors are, and what agency they have, is complex and contested. As has long been argued by scholars of science and technology studies, it is not simply a case of 'translating' evidence into action. Reactions to scientific evidence are complex and situated, influenced by social and institutional norms and cultures (Demeritt, 2001; McNeil, 2013; Wynne, 2010). To the extent that it is 'government' being asked to act, the ability of national legislators to respond to such demands depends on the political conditions within which decisions are made. This, in turn, depends on whether politicians feel that they have a mandate, from their electorate and others.

Democratic legitimacy: The Earth System governance approach is not explicit about how their calls for reform relate to democratic processes at the local, national or international level. Earth System governance is presented as a precondition of human society, something that *must* be done, given the weight of scientific evidence. The question of *how* reforms can be brought about, democratically or otherwise, is not specified.

Andrew Dobson describes this approach, stating what 'must' be done without specifying how, as attempting to play "a card that will trump political debate and discussion" (2010:765). Yet to the extent that action relies on legislation or policy change, politicians need to steer reforms through formal political processes. Put bluntly, what if calls for Earth System governance do not garner democratic support? Recent UK evidence suggests that public concern about climate change has low salience compared to other issues (Pidgeon, 2012). How should a politician respond if scientists and Earth System governance advocates call for urgent action, but publics, including those whose votes they depend upon, do not prioritise the issue? In this situation, politicians are left with the tricky job of crafting a case for action, on an issue that is not front-of-mind for voters (Willis, 2018).

These limitations to the Earth System governance approach do not undermine the fundamentals. This paper does not argue *against* recommendations for strengthened, multilateral governance. Rather, the analysis suggests that more emphasis must be placed on the processes by which such governance could be brought about, and how reforms can be steered through national political systems, in ways that engage electorates and develop a mandate for further action. In other words, researchers must address the 'politics gap' identified by Ian Bailey and Piers Revill (2015). Below, these issues are discussed with reference to a specific example: the case of climate governance, and its implementation in the United Kingdom.

2.4 Earth System governance: The case of climate change in the UK

The Paris Climate Agreement of 2015 can be seen as a step toward implementing Earth System governance. Following previous failed attempts, a record 195 countries reached agreement, declaring that 'climate change represents an urgent and potentially irreversible threat to human societies and the planet… deep reductions in global emissions will be required' (UNFCC, 2015:1). A goal was set to limit global average temperature rise to between 1.5°C and 2°C.

However, the Agreement also highlighted the limitations of global governance. Whilst a global goal was agreed, there were no legally-binding commitments or targets agreed for individual states. Each state instead assumed responsibility for developing its own plan, or 'nationally determined contribution' (NDC). The Paris framework offers each state the opportunity to shape their own response, to fit national circumstances and democratic possibilities. Yet so far, the sum total of all actions pledged through NDCs does not match the global ambition, with estimates suggesting that under current promises, the 2°C boundary will be breached (Fawcett et al., 2015).

The UK is in a relatively strong position to respond to the Paris Agreement. It has statutory targets on carbon reduction, enshrined in the 2008 Climate Change Act, passed with cross-party political support. The Act sets five-yearly carbon budgets, leading to an 80% reduction in emissions from 1997 levels by 2050. However, the means by which this goal will be reached are not clear. Targets need to be met through policies and action to reduce emissions in energy, transport, buildings and land use, for example. The Committee on Climate Change recently criticised government for a so-called 'policy gap' (Committee on Climate Change, 2017) saying that further policies are required if the targets are to be met. However, neither of the two main political parties in the UK is paying much attention to the issue, it remains a low priority to the electorate, and there are some signs that the cross-party consensus may be eroding (Carter and Clements, 2015; Farstad et al., 2018).

In short, despite a comprehensive international agreement, and a strong legislative framework for domestic action, there is limited political activity on climate change in the UK, and underachievement against targets set.

This shows that more emphasis needs to be placed on examining and understanding the place of climate change and, more generally, Earth System governance, within the complexities of national politics. The study described below uses data from a study of UK politicians, to investigate this question.

3. Method

3.1 Methodological orientation

This study aims to supplement macro, structural descriptions of governance, with a more fine-grained, contextual account of the ways in which national politicians experience the issue of climate change, as one of a number of

Earth System challenges. To do this, the study takes a mixed-method approach, inspired by what Sanford Schram (2013) calls "phronetic social science".

The term 'phronesis' refers to an Aristotelian categorisation of knowledge, described as "the practical wisdom that emerged from having an intimate familiarity of what would work in particular settings and circumstances" (Schram 2013:369). As such, it can be distinguished from *episteme*, or universal knowledge; and *technē*, or practical application of knowledge. Following this approach, this study aims to uncover politicians' phronetic knowledge. It scrutinises their understandings of the possibilities and constraints of their role, or what Schram et al refer to as "'unconsciously competent' expertise" (2013:371).

Phronetic social science can be seen as an approach rather than a theory, and its application is characterised by mixed-method, problem-driven research processes. In this case, the problem being addressed is how politicians understand and respond to climate change, and, following from this, how to develop better climate governance within the context of national political cultures and processes.

3.2 Research process

The research began with an examination of political speech on climate change in the UK House of Commons, using corpus analysis. I then conducted a focus group discussion with representatives from NGOs who work closely with politicians. Last, I conducted 23 narrative interviews with current and former MPs. Each of these stages is outlined below.

3.2.1. Corpus analysis of political speech
The first stage used the quantitative technique of corpus analysis, to investigate the language that politicians use to talk about climate change in public speech, in the House of Commons. Corpus analysis is a method developed within linguistics. Large volumes of text, known as corpora, are analysed to identify patterns in language use (Sinclair, 2005; Wynne, 2005). A corpus, consisting of 97000 words of speech in Parliament, was created, from debates about the 2008 Climate Change Act. The corpus, named the Climate Change Bill (CCB) corpus, was compared with a 'reference corpus', a representative sample of language. It was also compared with a corpus of parliamentary speech collected from discussions on the Budget in the same year, called the Budget Corpus. A detailed description of this method, and the findings, of this research can be found in a previous paper (Willis, 2017b).

3.2.2. Focus group with NGO representatives
Representatives from NGOs, consisting of six individuals who work directly with MPs on climate change, were invited to a focus group, hosted by the think-tank Green Alliance, in February 2016. Representatives from Christian Aid, Green Alliance, the Royal Society for the Protection of Birds, the World Wildlife Fund UK and Greenpeace took part. Comments made were non-attributable. I asked them about their experiences of working with politicians

on climate change, and their views on what motivates politicians. The discussion was recorded, transcribed and coded using nVivo software.

3.2.3 Qualitative interviews with MPs

I then interviewed 23 current and former MPs, between February 2016 and April 2018. Participants were selected to provide a balance of age, gender, political party, seniority and length of time served as an MP, as well as previous experience working on climate issues (see table). Known 'climate sceptic' MPs (defined as those who publicly state that they do not accept the scientific consensus, as represented by the Intergovernmental Panel on Climate Change (IPCC)) were not approached. This is because the research investigates how MPs try to understand and act on climate change, rather than examining the reasons for rejecting the issue altogether. Although this is an important question, a different research strategy would be needed for this group. Though climate sceptics are influential, they are small in number, with only five MPs out of 659 voting against the Climate Change Act in 2008.

Interviews were conducted under conditions of anonymity, following a written ethics protocol, and were recorded, transcribed and coded. Riessman's (2008) narrative method was used, focussing on eliciting narrative, with the interview conducted as a free-flowing conversation. As Todd Landman notes, "narrative analysis can illuminate the ways in which individuals experience, confront and exercise power" (2012:28), and so is particularly suited to phronetic social science.

The interviews were designed to investigate politicians' accounts of how they navigate their working life, and within this, whether or how they consider the issue of climate change. I asked interviewees how they responded to the scientific consensus on climate change, as established by the IPCC (2014). I then asked them to reflect on the ways in which the issue of climate change was understood, shaped and acted on in political life.

Table 1: Interviewees' background and experience	
gender	14 male, 9 female (gender balance of current Parliament is 71% male)
party affiliation	8 Conservative, 9 Labour, 4 Liberal Democrat, 2 other
time served as MP	Between 1 and 23 years' work as an MP; mean = 8.6 years
current status	12 sitting MPs; 11 former MPs, who left office between 2010 and 2017
seniority	9 interviewees had served in government; 4 had served on the opposition frontbench. 10 were backbenchers, most with experience on Select Committees.
record on climate change issues	7 with a strong record of activity on climate change issues (assessed through speeches in Westminster and elsewhere); 11 with some activity; 5 with little or no activity
participants were not asked for additional demographic data, e.g. age or ethnicity	

4. Results

The combined methods used in this study reveal a consistent picture of the way in which politicians respond to climate change. Whilst there were some differences between political parties (see Carter, 2013 for a discussion of the positions of the main UK parties), these differences were not marked; instead, a consistent pattern emerged, reinforced by the findings of the corpus analysis and focus group data.

The pattern can be summarised as follows. Most politicians accept the science of climate change, and do not question the scientific consensus established by the IPCC. (Note that as detailed above, the small number of known 'climate sceptic' MPs were not interviewed for this study). However, whilst politicians accept the science, they downplay the consequences. Most also show a reluctance to discuss the far-reaching implications of climate change for human society, or more radical proposals for mitigation. Questions of agency and democratic legitimacy, discussed above, condition their understanding, and their conception of plausible responses to climate change.

Below, evidence for politicians' understanding of the science of climate change is first reviewed. Then the themes of agency and democratic legitimacy are explored, using evidence from corpus analysis, interviews and focus group data.

4.1 Accepting the science, downplaying the consequences

Politicians generally accept and acknowledge the scientific consensus, as represented by the IPCC. However, this acceptance is coupled with a notable reluctance to open up discussion on the material significance of climate change.

Evidence for this response pattern derives both from corpus analysis of parliamentary speech, and from interview data. Corpus analysis reveals that politicians constantly refer to scientific evidence in discussing climate change. Speakers opened their statements with reference to the science, and the words *science, scientific* and *scientist(s)* occur very regularly. They work to establish the scientific case, with a high frequency of words in the semantic grouping 'cause and effect / connection' (words such as *produce / impact / responsible / cause / effect*). Thus there is a broad acceptance of the scientific case for action. These findings are discussed in more detail in a separate paper (Willis, 2017b).

Interview data reveals a similar picture. In each interview, politicians were prompted to consider the significance of climate change. As the interviewer, I noted the scientific consensus, as reflected by the IPCC, and stressed the implications of this, by saying, for example,

> *We've had a stable climate for twelve thousand years; we risk not having a stable climate any more. In those twelve thousand years, that's when we've done everything from agriculture onwards. Human society as we know it has been formed in those twelve thousand years. The shift we're talking about is really profound. Do you think that politicians, or society more widely, have taken that on board?*

This question was asked in each of the 23 interviews, with the approach varying slightly depending on the background of the interviewee. The response to this was acceptance and acknowledgement. Most interviewees nodded and murmured agreement. Eight expressed strong fear or concern, saying, for example, "it's terrifying", or "it's the greatest challenge facing the planet".

The combined findings from the corpus analysis and interviews suggest that politicians have a broad understanding of the scientific consensus on climate change, and see it as a problem that needs attention, with a significant minority acknowledging the profound nature of the problem.

However, despite this acceptance of the evidence, data from both the corpus analysis and the interviews reveals a striking reluctance to open up discussion on the significance of climate change. Corpus analysis showed that, while politicians referred to scientific evidence, they did so selectively, with very little discussion about abrupt or irreversible impacts, although these are discussed in IPCC reports. In the debates analysed, there are only three uses of words or phrases associated with abrupt or irreversible impacts (*tipping point / threshold (event) / abrupt / irreversible*) compared with 128 uses of *science / scientific / scientist(s)*.

A similar picture emerges from interview data. Despite acknowledgement of the problem, no interviewee offered further comments or questions about the science of climate change, or its impacts. All interviewees found ways to move the discussion on to other topics. One former MP said that, during his time in Parliament, he had never heard the issue 'strongly articulated':

> *Even those of us who I strongly advocated action, I don't think we, I'm trying to think back to a time when it was ever really strongly articulated like that… it's almost like they don't want to think about that. I'd say that's even true of people who think we need to grip it, it's like it's such a frightening thought that it's easier to just assume and believe, be optimistic.*

Instead of continuing discussion of the significance of climate change for human society, interviewees steered the discussion on to other linked areas, such as parliamentary procedure, public opinion, or technical policy solutions. My field notes reveal what I perceived as a "social awkwardness" that emerged if I continued to press this line of questioning:

> *I find it difficult to ask these questions… I feel confrontational, as if I am breaking the rules of what can be talked about* [extract from fieldnotes].

MPs' responses to climate change therefore combine an acceptance of the issue, coupled with a reluctance to open up discussion on its implications. The sociologist Kari Norgaard labels this 'socially organised denial', which she defines as "not in most cases a rejection of information per se, but the failure

to integrate this knowledge into everyday life or to transform it into social action" (2011:11).

Part of the reason for this may lie in the difficulties of developing a full understanding of the implications of climate change. One veteran MP explained this by distinguishing between 'agreement' and 'understanding', as this exchange shows:

> *Interviewer: The science is pretty settled, most politicians agree with that scientific consensus.*
>
> *Interviewee: Sorry, I need to qualify that. Agree without understanding. It's become the politically correct thing to do… but do they understand what it means?*

In the NGO focus group, consisting of individuals who work directly with politicians, participants argued that understanding, as distinct from agreement, developed only when politicians were appointed into a relevant role, as a junior minister or spokesperson for energy or climate change, for example:

> *Most politicians will have a sort of sense, when they're appointed into a role, broadly what the issues are, but I think the reason that the commitment grows is that they get the data, they get the evidence, they see what's going on, and go, bloody hell, this is going to be disastrous.*

Another NGO representative described how politicians undergo a process of realisation when they acknowledge that climate change is not another issue to add to the list, but something that affects the foundations of our society:

> *I suspect that for most politicians, just routinely experiencing the media, then they would hear environment and climate change in no particularly separate box from health, education and transport, the business world, Europe: it's just one of a range of issues that are political and of the day, and something needs to be done. And actually when they go into it, and have to start getting their head round it, they realise that this is this big massive transformative thing that could happen.*

Taken together, data from corpus analysis, interviews with MPs and focus group evidence therefore shows that politicians may refrain from discussing the profound, long-term implications of climate change for human society, in part because of this gap between 'awareness' and 'understanding'. In the words of the focus group participant above, they do not conceptualise climate change as a "massive transformative thing".

4.2 Agency

As outlined above, while politicians accept the science of climate change, they tend to downplay its implications. They are reluctant to discuss more radical solutions, such as the proposals put forward by Earth System governance advocates. This can be explained only in part by a lack of understanding of

the evidence. Data from this study shows that responses are conditioned by politicians' understanding of agency: their own agency, and the wider ability of institutions and states to respond in full. From the vantage point of the national politician – even the most committed, fearless politician – the agency of individual politicians, and governments, is limited. To put it in the earthy language of one veteran ex-minister interviewed, "motivation isn't just a set of beliefs, it's about an ability to implement… it's all very worthy, but what the fuck can you do?"

Limitations to agency are both practical – what is achievable within the framework of current laws and procedures – and also cultural: how politicians understand social and cultural norms. These are discussed in turn below.

Most interviewees highlighted practical and procedural difficulties in responding to climate change. In particular, they drew attention to the lack of 'fit' between large-scale, earth-system challenges, and the daily practice of politics. Bluntly, politicians are realistic about the extent of their power. This is partly a function of the UK system, in which the Government has almost exclusive power to initiate legislation, leaving backbench and opposition MPs relatively powerless, with roles largely as influencers or protesters, as more than half the interview sample pointed out. However the limitations of the government's power are also front-of-mind for politicians. As one said,

> *The punters, the populace think that the politicians, the prime minister for example, is all-powerful. Actually, they absolutely are not. I'm not saying they have no power, but they can't just do it.*

Politicians also identified less tangible but nonetheless very significant constraints on agency. Interviews revealed the ways in which MPs' responses to climate change are conditioned by social and cultural norms, and institutional practices. Specifically, those who speak out on climate change are regarded by their colleagues as outsiders, not part of the political mainstream. I asked one MP, who was in Parliament when the 2008 Climate Change Act was passed, whether it was discussed much. She replied, "a little bit, not very much. It was seen as something by the obsessives". A former MP, who had campaigned actively on climate change and environmental issues, said "I was known as being a freak".

Whilst all interviewees reported that there was a small minority of MPs who champion climate issues, they also pointed to a more widely-shared reluctance to engage, particularly from elements of the Conservative party, but also reported across party lines. One explained it as follows:

> *There's a kind of obdurate hostility which is culturally quite difficult. And just as there's a kind of cross-party group and an understanding, who see the science, recognise intellectually, there's a huge group that does not, that sees it as peripheral, wet, liberal, lefty, interfering, non-business.*

Another interviewee noted that climate change issues were rarely raised in debates about the economy. When asked what would happen if he talked about climate change in a debate on the Budget, he replied,

> *They'd just think you were a bit 'niche', is the way I'd put it. I say 'niche' in quotes like a bit of a lunatic fringe.*

NGO representatives described the same phenomenon. They reported that climate change was not seen as an issue that an ambitious MP would champion. One described how it might look to a government minister wanting to develop their personal power and influence:

> *If you're [a cabinet minister] and you broadly think that climate change is happening and you should do something about it, you walk into cabinet and you start saying right guys what are we going to do about climate change, you'll just get laughed out of the room, because they want to be talking about the economy, and building stuff, and bombing people. It's just not a serious sort of cabinet issue for the big bruisers. [If] you're trying to build your base in a party, you absolutely don't do that by talking about airy fairy climate change. You do that by talking about jobs and the economy.*

As a result, whilst a minority of MPs were vocal and insistent in their support of climate change action, most reported that they felt the need to self-censor: to restrict the amount that they talk about climate change, or modify the language they use. (This is discussed in more detail in a separate paper, Willis, 2017a). For example, one reported that she felt she would get a better outcome from discussions if she didn't appear to be "a climate change zealot". When arguing for a sustainable transport scheme in her constituency, she chose to make her case on economic and social grounds, without mentioning carbon reduction:

> *I think if I had mentioned carbon emissions, I would have been, there would have been a rolling of eyes and saying, oh here he goes again.*

These findings are consistent with previous research on politicians, which show that MPs' outlooks and actions are influenced by institutional and cultural contexts. For example, studies on gender in the House of Commons (Lovenduski, 2012; Malley, 2012; McKay, 2011; Puwar, 2004) demonstrate that the norms and rituals of parliament condition and constrain action. New institutionalist thinkers refer to this as a 'logic of appropriateness' (Chappell, 2006:223). Institutions like Parliament should be seen, they argue, as 'collections of interrelated rules and routines that define appropriate actions' (Chappell, 2006:161; see also Douglas, 1986; Lewis and Steinmo, 2012). In short, the agency of individual politicians is constrained not just by law and procedure, but by social and cultural norms.

These norms can also be seen amongst the wider political community, including representatives from NGOs and advisory groups. One MP, a veteran

climate campaigner, criticised those outside parliament for crafting messages to appear credible and reasonable to politicians:

> …people coming in, basically telling MPs what they want to hear… they're basing their advice to us on what they perceive to be politically acceptable, rather than what's scientifically necessary. It made me so angry.

This interviewee vividly described how experts, when talking to MPs, "don't want to sound like an outlier… it's something about this place, I think, once you get inside one of those Committee rooms."

NGO representatives also reported how they crafted messages that they believed would resonate and appeal to politicians. One focus group participant described the NGOs' attempts to present climate action as an economically beneficial strategy, comparing their messages to that of corporate consultancies:

> I think the environment community, we've chased ourselves round to pretend that we're McKinsey and EY, and it's been really helpful in winning the overall argument, shifting how climate change is perceived.

Political scientists refer to this process of crafting messages as 'framing', in which politicians and other political actors, consciously or not, shape an issue to fit with dominant ideologies, a sense of what is achievable, prevailing norms and assumptions and so on (Benford and Snow, 2000; Cobb and Coughlin, 1998; Kingdon, 1995).

Evidence from the corpus analysis supports the finding that an economic and technical framing is used to discuss climate change. Phrases such as *economy, efficiency, reduction/reduce, trading, costs, measures* predominate. The dominance of this language is striking when compared to other parliamentary speech. The analysis shows that politicians use the terms 'costs' and 'benefits' twice as often in speech about climate than speech about the budget (Willis, 2017a).

Thus the evidence presented here shows a tendency to focus on immediate, technical solutions, rather than considering the full implications of climate change for politics and society. Politicians and those who interact with them seek ways of addressing climate change which fit with the working practices of Parliament and the institutions of policymaking. Interviewees were eager to give examples of possible approaches, such as incentivising renewable energy, and promoting public transport.

This reluctance to linger on the 'big problem' of climate change, and a move instead to 'little solutions', is a result of politicians' understanding of their agency, or room for manoeuvre. They would prefer to propose practical solutions which fit with social, cultural and institutional norms. Yet it leads to questions about whether such solutions add up to a sufficient response to the problem. It certainly precludes discussion of the arguments put forward by

more radical critics (eg Jackson, 2011; Klein, 2015) that climate change requires a fundamental rethink of economy and society.

4.3 Democratic legitimacy

Politicians' responses to climate change are also conditioned by their understandings of their representative role. The relationship between an elected politician and those that they represent is complex, and the subject of much debate in political theory (for a summary see Dobson and Hamilton, 2016; Mansbridge, 2003). Recent work by Michael Saward argues that representation should be seen not as a static fact, but as a dynamic exchange between representatives and those being represented, in which a politician (or anyone else seeking a representative role) can make a 'representative claim', which in turn is accepted or rejected by others:

> Political representation is not simply a fact of political life, or an achieved state of affairs, resulting from elections. Rather, at a deeper level, representation is a dynamic process of claim-making and the reception of claims. (Saward, 2010:8)

Data from this study fits with Saward's conception of representation as claim-making. MPs reported consistently that they felt little or no pressure from most people they saw themselves as representing, to work on climate issues. Thus, if they saw the need to act on the issue, they worked to construct a claim, demonstrating how their stance on climate change could be justified in terms of their role as an elected politician.

Evidence for the lack of pressure to act on climate change was strong. Typical comments included

> *I've knocked hundreds, literally thousands of doors, and had tens of thousands of conversations with voters… and I just don't have conversations about climate change.*

> *When you go around with your clipboard asking what are your top priorities, you always know it's health, economy, education, crime, stuff like that, and environment always comes very [low] down.*

Though all interviewees reported that vocal support for climate action was low, they did describe a minority who, though small in number, were vocal about the need for climate action. One interviewee described this group as "articulate, affluent people who have perhaps a particular type of worldview". Another described climate change as one of a number of concerns including development and peace issues, which he labelled "the concerns of that type of person, who were committed activists and great people, but were not representative, at all, at all."

These findings are consistent with a recent review of evidence by Pidgeon et al, which states that "climate change is invariably not the highest or most important priority for many people" (2012:s87). Thus, if politicians took their

cue entirely from the people that they represent, they would not prioritise climate issues. As a result, some chose to stay quiet, as illustrated by one interviewee, who dentified himself as very concerned about climate change:

> *Interviewer: What worked in terms of making climate change meaningful and something that connects with people, voters?*
>
> *Interviewee: I very very very rarely ever rose to that challenge, because there just wasn't enough time or bandspace or resources to even think about that, much as I would have liked to do that.*

Others, however, persisted, despite the difficulties. Interviewees discussed the ways in which it was possible to address the issue, through developing an account of how a certain course of action would serve the interests of they claim to represent: in Saward's terms, developing a 'representative claim'. A separate paper (Willis, 2018) offers further details of this claims-making process.

Four types of claim can be seen. First, some MPs make a *cosmopolitan claim*, saying that it is in the interests of the human species as a whole to act, and therefore it should be a concern for all politicians.

> *I often started off with that sort of fairly internationalist viewpoint… a lot of the impacts of climate change are going to hit other places before they hit here. [My constituency] is not likely to be one of the first places to be hit particularly badly. So what? I just happen to be here.*

Second, some frame the issue as a *local prevention claim*, asserting that action is necessary to prevent impacts such as flooding in their local area.

> *I talk for example quite a bit about… domestic flood risk. I don't see it as one of the biggest consequences of climate change, in reality, but "your house is going to flood if we keep doing this and you will not be able to get insurance for it, so we need to do something about it"… is a powerful message.*

Third, many point to the economic or social benefits arising from taking action on climate change, such as jobs created in renewable energy industries. This can be called a *co-benefits claim*, as politicians are claiming that such action helps toward tackling climate change, as well as bringing other specific local benefits.

> *In [my area], the green economy, the offshore wind, presents an opportunity.*
>
> *I'm happy to use an economic argument if that means that more people will come on side… I change the language to be much, much less extreme.*

Last, a significant minority of interviewees judged that they could not speak out on climate, because a direct claim would be opposed or ignored. Instead, they make what might be called a *surrogate claim*, in which climate change is not explicitly mentioned. Instead, other reasons are given for measures which the politician privately believes will help to tackle climate change.

> *I would rather not say a word about climate change and stop the [local road] being ten lanes, than make a really good case about climate change and have a ten lane bloody superhighway next to us.*

As these examples show, it is not straightforward for politicians to make a case for why, as elected representatives, they should act on climate change. However, politicians know that action is necessary, and so develop strategies for building support. Below, I discuss how researchers and practitioners could better use politicians' knowledge and experience, and support them in developing stronger responses to the challenge of Earth System governance.

5. Conclusion: The role of national politicians in Earth System governance

Below, suggestions are first made for ways in which Earth Systems governance analysis could better account for national political considerations. Then, implications for practice are drawn out. Suggestions are made for ways in which politicians could be better supported to integrate considerations of Earth System governance into national strategies, responding to the themes of agency and democratic legitimacy set out in this paper.

5.1 The research challenge: Linking Earth Systems to political realities

The example of UK politicians' responses to climate change shows that Earth System governance analysis needs to pay more attention to the ways in which these global issues are experienced, shaped and implemented by decision-makers at the national level.

The evidence from this study shows that there is a considerable gulf between the extent and reach of governance mechanisms proposed by Earth System governance advocates on the one hand, and the more limited efforts of politicians to craft a manageable and meaningful agenda for climate action, on the other. Rather than lingering on the subject of complex global challenges, politicians acknowledge the evidence, but then turn to what they perceive as achievable actions. This may be a well-meaning attempt, even a tactical choice, to frame difficult issues in ways that are less threatening and more amenable to action: better to do something than nothing at all.

The obvious drawback to this strategy is, of course, that the stability of earth systems is not a matter that can be negotiated away. If Earth System governance advocates want national decision-makers to make more significant efforts to address global challenges, they will need to work with them, drawing on their phronetic knowledge (Schram et al., 2013) to understand how political strategies can be developed. In particular, they need

to acknowledge and address the question of agency; and the need to develop democratic legitimacy for action.

As Noel Castree and others have argued (Barry, 2012; Castree, 2017), doing this will require better interdisciplinary working, involving collaboration with critical social sciences and humanities scholars. The study presented here is one such example. Yet the working methods, language and publication habits of different disciplinary groupings can make such collaboration challenging.

5.2 Addressing agency

The evidence of this study shows that there is a need, in both research and practice, to acknowledge and address questions of agency – the 'room for manoeuvre' that individual actors feel they have, within practical, procedural, social and cultural constraints.

An obvious procedural barrier is the relatively short-term time horizon of parliamentary politics. Within the practices of political life, it is very hard to open up debate on climate change and other threatened earth systems. Some legislatures, including Hungary, Finland and Wales, have created institutions such as an 'ombudsperson' or 'commissioner' tasked with representing future generations, allowing better discussion of long-term, complex issues (Urry, 2016). Another possibility would be a National Convention or Citizens' Assembly, providing an opportunity for politicians to discuss these issues directly with publics and stakeholders. Ireland's recent Citizens' Assembly on Climate Change may provide a model for this (The Citizens' Assembly, 2018).

The UK's Climate Change Act, based on five-yearly carbon budgets, can be seen as an attempt to bring the long-term and global into the practice of everyday politics. Yet as this study demonstrates, the Act has not yet brought about sustained engagement by politicians. Targets are seen as the responsibility of one single Government department, and championed by a small number of committed MPs. A more diffuse, distributed system of responsibility, shared across different ministries, and with a greater role for local government and cities, could lead to a stronger mandate for action.

This study shows clearly that MPs also feel constrained by social and cultural norms. They do not speak out on climate change, for fear of being seen as outsiders. This and other evidence (eg Hulme, 2009) points to the importance of vocal support from influential figures, including political party leaders and elder statespeople; business leaders, civil society organisations and, of course, the scientific community. Such interventions could stress the scale and significance of the issue, and the need for action, and engage politicians in a debate about responses, building on the understandings of the politicians themselves.

Last, there is a need for a more explicit articulation of power relations and vested interests which may constrain politicians (Geels, 2014; Oreskes and Conway, 2012; Phelan et al., 2012). The fossil-fuel divestment movement, now gaining considerable traction, is one example of this. Efforts to uncover

and quantify public subsidies for carbon emissions, so-called fossil fuel subsidies, are another (Coady et al., 2017).

5.3 Building democratic legitimacy

As Winston Churchill famously said, "Democracy is the worst form of Government except for all those other forms" (HC Deb 11 November 1947 vol 444 cc203-321). Unless one of those 'other forms' are pursued by currently-democratic states, any proposal for Earth System governance must gain the support, passive or active, of its electorate. Thus it must be asked of every governance proposal, not just "Is it technically sound?" but also "Does it build democratic support?"

As this study shows, if MPs merely responded to the representations they received from the electorate, they would not have much reason to act on climate change. Politicians play a mediating role between the scientific consensus embodied in the Paris Agreement, and current public views and demands, on the other. They do this by building a 'representative claim' (Saward, 2010) that action on climate is in the democratic interest. Other actors, including NGOs, business groupings and academic researchers, can join with politicians in this process of claims-making, for example, stressing social and economic co-benefits of climate action; or articulating links between extreme weather events and climate change.

It may be, too, that a greater stress on deliberation between citizens and politicians, as well as other actors including scientists, could lead to new strategies which garner public support. As in the case of Ireland's Citizens' Assembly (The Citizens' Assembly, 2018), deliberative processes could allow politicians and publics to debate the implications of climate change, and co-create responses (Dryzek, 2002). There have been limited experiments on such models, such as the approach of participatory budgeting (Davidson & Elstub, 2014).

Comparative research between different countries (notwithstanding the difficulties of generalising from specific political cultures) could also reveal which climate strategies built stronger democratic mandates for national and international action. For example, has the German Energiewende, or Energy Transition, with its focus on local action by citizens, social enterprises and municipalities, increased understanding of, and support for, significant climate action?

Given the magnitude of Earth System challenges, researchers and advocates may well be tempted simply to raise the volume, placing further demands on national politicians to accept and implement their proposals, without acknowledging the limitations they face. The research presented here shows, instead, the value of working with national politicians to craft politically feasible responses which build a democratic mandate for change.

Bailey, I., Revill, P., 2015. Re-politicizing climate governance, in: Bäckstrand, K., Lövbrand, E. (Eds.), Research Handbook on Climate Governance. Edward Elgar Publishing, Cheltenham.

Barry, J., 2012. The politics of actually existing unsustainability: human flourishing in a climate-changed, carbon constrained world. OUP, New York.

Benford, R.D., Snow, D.A., 2000. Framing processes and social movements: An overview and assessment. Annual Review of Sociology 26, 611–639.

Bernstein, S., Hoffmann, M., 2018. The politics of decarbonization and the catalytic impact of subnational climate experiments. Policy Sciences 1–23.

Biermann, F., 2014. The Anthropocene: A governance perspective. The Anthropocene Review 1(1), 57–61.

Biermann, F., et al., 2012. Navigating the Anthropocene: Improving Earth System Governance. Science 335, 1306–1307.

Biermann, F., et al., 2012. Transforming governance and institutions for global sustainability: key insights from the Earth System Governance Project. Current Opinion in Environmental Sustainability 4(1), 51–60.

Brito, L., Stafford-Smith, M., 2012. State of the Planet Declaration. Planet Under Pressure: New Knowledge Towards Solutions conference, London.

Carter, N., 2013. Greening the mainstream: party politics and the environment. Environmental Politics 22 (1), 73–94.

Carter, N., Clements, B., 2015. From 'greenest government ever' to 'get rid of all the green crap': David Cameron, the Conservatives and the environment. British Politics 10 (2), 204–225.

Castree, N., 2017. Speaking for the 'people disciplines': Global change science and its human dimensions. The Anthropocene Review 4(3), 160–182.

Chappell, L., 2006. Comparing Political Institutions: Revealing the Gendered "Logic of Appropriateness." Politics & Gender 2(2), 223–235.

Childs, S., 2004. A feminised style of politics? Women MPs in the house of commons. British Journal of Politics and International Relations 6(1), 3–19.

Coady, D., Parry, I., Sears, L., Shang, B., 2017. How Large Are Global Fossil Fuel Subsidies? World Development 91, 11–27.

Cobb, R.W., Coughlin, J.F., 1998. Are elderly drivers a road hazard?: Problem definition and political impact. Journal of Aging Studies 12 (4), 411–427.

Committee on Climate Change, 2017. 2017 Report to Parliament - Meeting Carbon Budgets: Closing the policy gap.

Demeritt, D., 2001. The Construction of Global Warming and the Politics of Science. Annals of the Association of American Geographers 91(2), 307–337.

Dobson, A., Hamilton, L., 2016. Representation and Political Theory. European Political Science 15(4), 570-578.

Douglas, M., 1986. How Institutions Think. Syracuse University Press.

Farstad, F., Carter, N., Burns, C., 2018. What does Brexit Mean for the UK's Climate Change Act? The Political Quarterly 89(2), 291-297.

Fawcett, A.A., et al., 2015. Can Paris pledges avert severe climate change? Science 350 (6265), 1168–1169.

Future Earth, 2018. Future Earth: Research for global sustainability [WWW Document]. Future Earth. URL http://www.futureearth.org/home (accessed 9.10.18).

Geels, F.W., 2014. Regime Resistance against Low-Carbon Transitions: Introducing Politics and Power into the Multi-Level Perspective. Theory Culture Society 31(5), 21–40.

Hajer, M., et al., 2015. Beyond Cockpit-ism: Four Insights to Enhance the Transformative Potential of the Sustainable Development Goals. Sustainability 7(2), 1651–1660.

Hulme, M., 2009. Why we disagree about climate change: understanding controversy, inaction and opportunity. Cambridge University Press, Cambridge.

IPCC, 2014. Climate change 2013: the physical science basis: Working Group I contribution to the Fifth assessment report of the Intergovernmental Panel on Climate Change. Cambridge University Press, Cambridge.

Jackson, T., 2011. Prosperity without growth: economics for a finite planet. Earthscan, London.

Kingdon, J.W., 1995. Agendas, alternatives, and public policies, 2nd ed. Longman, New York.

Klein, N., 2015. This changes everything: capitalism vs. the climate. Penguin books, London.

Kuyper, J., et al., 2018. Non-state actors in hybrid global climate governance: justice, legitimacy, and effectiveness in a post-Paris era. Wiley Interdisciplinary Reviews: Climate Change 9 (1), e497.

Landman, T., 2012. Phronesis and narrative analysis, in: Flyvbjerg, B., Landman, T., Schram, S. (Eds.), Real Social Science. Cambridge University Press, Cambridge, pp. 27–47.

Lewis, O.A., Steinmo, S., 2012. How Institutions Evolve: Evolutionary Theory and Institutional Change. Polity 44, 314–339.

Lovenduski, J., 2012. Prime Minister's questions as political ritual. British Politics 7(4), 314–340.

Malley, R., 2012. The institutionalisation of gendered norms and the substantive representation of women in Westminster and the Scottish parliament (Ph.D. thesis). University of Bristol.

Mansbridge, J., 2003. Rethinking Representation. American Political Science Review 97(4), 515–528.

March, J.G., Olsen, J.P., 1984. The New Institutionalism: Organizational Factors in Political Life. The American Political Science Review 78(3), 734–749.

McKay, J., 2011. 'Having it All?' Women MPs and Motherhood in Germany and the UK. Parliamentary Affairs 64(4), 714–736.

McNeil, M., 2013. Between a Rock and a Hard Place: The Deficit Model, the Diffusion Model and Publics in STS. Science as Culture 22, 589–608.

Norgaard, K.M., 2011. Living in denial: climate change, emotions, and everyday life. MIT Press, Cambridge, Mass.

Oreskes, N., Conway, E.M., 2012. Merchants of doubt: how a handful of scientists obscured the truth on issues from tobacco smoke to global warming. Bloomsbury, London.

Phelan, L., Henderson-Sellers, A., Taplin, R., 2012. The Political Economy of Addressing the Climate Crisis in the Earth System: Undermining Perverse Resilience. New Political Economy 18(2), 198–226.

Pidgeon, N., 2012. Public understanding of, and attitudes to, climate change: UK and international perspectives and policy. Climate Policy 12(sup01), S85–S106.

Puwar, N., 2004. Space Invaders: Race, Gender and Bodies Out Of Place. Berg.

Riessman, C.K., 2008. Narrative methods for the human sciences. Sage Publications, Los Angeles.

Rockström et.al., 2009. Planetary Boundaries: Exploring the Safe Operating Space for Humanity. Ecology & Society 14(2).

Rockström, J., et al., 2009. A safe operating space for humanity. Nature 461, 472–475.

Saward, M., 2010. The Representative Claim. Oxford University Press.

Schram, S.F., et al., 2013. Political Political Science: A Phronetic Approach. New Political Science 35 (3), 359–372.

Sinclair, J., 2005. Corpus and Text: Basic Principles, in: Wynne, M. (Ed.), Developing Linguistic Corpora: A Guide to Good Practice. Oxbow Books, pp. 1–16.

The Citizens' Assembly, 2018. Third Report and Recommendations of the Citizens' Assembly: How the state can make Ireland a leader in tackling climate change.

Urry, J., 2016. What is the future? Polity Press, Cambridge, UK.

Willis, R., 2017a. How Members of Parliament understand and respond to climate change. *The Sociological Review* 66(3): 475–491.

Willis, R., 2017b. Taming the Climate? Corpus analysis of politicians' speech on climate change. *Environmental Politics* 26(2): 212–231.

Willis, R., 2018. Constructing a 'representative claim' for action on climate change: Evidence from interviews with politicians. *Political Studies* advance online publication, January.

Wynne, B., 2010. Strange Weather, Again Climate Science as Political Art. Theory Culture Society 27(2-3), 289–305.

Wynne, M. (Ed.), 2005. Developing Linguistic Corpora: A Guide to Good Practice. Oxbow Books, Oxford.

Part C

Supporting Paper: Personal reflections on research and practice

1. Personal reflections on research and practice

Below, I offer two sets of reflections on my research, both of which explore themes which could not form part of published papers. In the first section, I reflect on the research process itself, and the challenges that I addressed. In the final section, I use my research and experience as a practitioner as a springboard for a more wide-ranging discussion on the future of climate politics.

1.1 Reflections on the research process

I came to doctoral research after twenty years on the frontline of environmental policy and politics, having worked at the European Parliament, directed a think-tank, served as a member of a number of government advisory committees and undertaken consultancy work for public, private and voluntary sector clients. Returning to academia has been both rewarding and challenging. I have thoroughly enjoyed doctoral research, as it gave me the chance to pursue my own research question, read widely, and develop answers over a far longer stretch of time than had been possible in my working life. Before the PhD, I had worked on few research projects lasting more than a year. I have greatly appreciated the luxury of time and freedom that doctoral research provides.

Stepping into an academic setting has also allowed me to develop a degree of critical distance from my work setting. For example, I have found myself reflecting on reports and blogs produced by government, think-tanks or industry groupings, to question the framing or assumptions made in their work. This has made for some interesting conversations with Green Alliance, as the co-sponsors of the doctoral project, as they find me turning my academic gaze upon them. When I presented some research findings to them, and explained how difficult politicians found it to talk about the far-reaching implications of climate change, it was clear that they too shied away from that discussion, and wanted me to be careful how I talked to politicians about it. As one said to me, "You don't want to get into all that doom and gloom stuff, Becky". Like the MPs, Green Alliance staff had, implicitly or explicitly, tried to 'tame' the climate, shaping it into an issue that they could discuss comfortably with their stakeholders.

Doctoral research also presented some challenges. In this section, I discuss five core issues that I have had to address in the course of this project. First, there was a recurring question during the research, about the status of scientific evidence on climate change. Second, I thought constantly about my positioning in the research, as both an academic researcher and a practitioner in this field. Third, whilst I was clear from the start that this study would be interdisciplinary, this did pose more of a challenge than I had thought it might, when operating in an academic setting. Fourth, the transition to academic research meant having to develop my skills in method and data analysis; and last, I had to learn the peculiar practice of academic publishing. I review each of these below.

Challenge 1: Handling the science

Whilst my research does not focus on the science of climate change, I quickly found that any research on climate needs to position itself with reference to climate science, and the production of scientific knowledge on climate.

There are two reasons for this. First, climate change is only fully understandable through scientific understanding and evidence. Climate systems at a planetary level can only be viewed through techniques of scientific observation, synthesis, modelling and forecasting, over long timescales and wide geographies; and the effects of anthropogenic emissions of greenhouse gases can only be understood with the help of these scientific techniques. Thus an understanding of climate change relies on the use of scientific knowledge claims (Jasanoff, 2010; Wynne, 2010). All discussions of climate change, and all climate action, rely on an account of the science. All of the research participants in this study, for example, are reliant on scientific evidence on climate change to inform their position.

Second, there have been high profile controversies about climate science, notably the 2009 'climategate' controversy (Reay, 2010) and the continued reluctance of some politicians, particularly in the US and Australia, to accept the scientific consensus on climate change. In the UK, there are a number of media commentators who oppose the scientific consensus, but very few politicians take an openly hostile stance, with just five MPs voting against the 2008 Climate Change Act. Nevertheless, the presence of the climate sceptics is felt strongly, with MPs in this study telling me that they felt worried about expressing views in case they were targeted by the vocal minority of sceptics.

Early on in my research, I therefore realised that I needed to clarify my position on the scientific evidence. I decided that I would use the account of the science provided by the Intergovernmental Panel on Climate Change (IPCC). I made this clear in the introduction I gave to interviewees, and in each paper I wrote.

The IPCC was established in 1988 by the World Meteorological Organisation and the United Nations Environment Programme, in their words, "to assess on a comprehensive, objective, open and transparent basis the scientific, technical and socio-economic information relevant to understanding the scientific basis of risk of human-induced climate change, its potential impacts and options for adaptation and mitigation" (IPCC 2017). The IPCC acts as a sort of clearing house for climate science: scientists submit published papers, which are considered by a series of thematic Working Groups, and amalgamated into IPCC reports offering a summary of the state of knowledge.

The IPCC is not immune from criticism. Brian Wynne (2010) claims that it is overly conservative and cautious, and that the way in which the structures and committees of the IPCC work, particularly how they deal with scientific uncertainty, results in a refusal to consider potential abrupt or radical shifts in climate. Both Wynne and David Demeritt (2001) argue that the structure of the IPCC dictates a technocratic, economistic approach to climate mitigation. More widely, scholars of science and technology studies (STS), a field I drew

on in my research, insist on subjecting scientific knowledge claims to critical scrutiny, and seeing them as socially situated (Demeritt, 2001; McNeil, 2013; Wynne, 2010).

I support this urge to situate and critique the scientific process, and want to acknowledge it. Yet I felt that it was important for my work to focus not on the production of scientific knowledge itself, but on the specific role of politicians in the process. For this reason, I decided to reference the IPCC's account of climate science, as a starting point for my work, enabling me to concentrate on my specific research question, rather than being drawn into debates about the scientific consensus.

I also decided to exclude known climate sceptic MPs from my study, defined as those who publicly state that they do not accept the scientific consensus, as represented by the IPCC. This is because the research question focuses on how MPs try to understand and act on climate change, rather than examining the reasons for rejecting the issue altogether. Although this is an important question, a different research strategy would be needed for this group.

This position on climate science was accepted by my interviewees, and by referees of journal papers. It was, though, often questioned by those involved in reviewing my research, including supervisors and members of PhD Panels. Stating the scientific consensus on climate change was seen by some as promoting my own point of view, which, it was argued, I should avoid doing as an academic researcher. This was often linked to comments about my background in advocacy, relating to the point discussed below, about my own positioning in the research.

As the discussion above shows, there are very valid questions to be asked about the production of scientific knowledge on climate change. However, this is not the subject of my study. I felt that there is enough evidence, and a strong enough consensus, on climate science to provide a firm enough foundation for my research. This is why I used the IPCC's account of climate science as a reference point, both in interview discussions and in written papers, as the starting point for my enquiry.

Challenge 2: My positioning in the research
A related challenge that has persisted throughout my doctoral studies is the question of how I position myself as an academic. As discussed above, much research, in science and technology studies (STS) and sociology, for example, has demonstrated that academics are not neutral, objective or impartial observers (Haraway, 1988; Latour, 1987; Wynne, 2014). There is, of course, a long tradition of academic engagement in political and social movements, with many academics seeing their work as part of a wider project of social change (see Gergen, 2015 for a discussion).

Nonetheless, in the course of my research and practice, I have found that the ideal of 'objective academic enquiry' still exerts a powerful hold over many people's imaginaries, both within and outside academia. This characterisation

contrasts the 'academic' with the 'activist'. Whilst the academic strives for evidence and understanding, the activist strives for a goal framed in terms of social or environmental outcomes. Academics may see activists as 'customers' or 'users' of the evidence that they have generated; activists might use academic work to build a case to promote their cause. However, the two roles are seen as distinct, with a cordon sanitaire erected between the two. If academics were to pursue causes, it is often argued, their objectivity would be compromised.

As my research developed, I found myself criticised simultaneously for being 'too academic' and 'too much of an activist'. My colleagues on the frontline, at Green Alliance and elsewhere, were frustrated by the process of academic evidence-gathering, and by my focus on what they saw as difficult, long-term issues. They wanted quicker, more manageable outputs that could be used to improve advocacy with politicians in the short-term. I found myself defending the academic research process, explaining, for example, why a certain amount of distance, theoretical analysis and thorough review were useful steps to developing robust understandings. Meanwhile, I was often asked by academics, including my supervisors, participants in my research reviews, and journal reviewers, to clarify my stance, and I was sometimes asked to distance myself from climate activists or advocates. For example, one journal reviewer objected to my use of the term 'the climate problem', stating that "it may not be perceived as such by members of society", and encouraging me to use the more neutral term 'issue'.

This criticism from both sides made me realise that I needed to clarify my own understanding of my academic role, in keeping with the theoretical stance I outline above. In simple terms, I knew that I rejected the academic/activist distinction, which I felt was neither an accurate representation of either role, nor a useful ideal-type. I knew that I had benefited from the insights of academic activists (or activist academics) throughout my education and career; indeed I remembered how, as an undergraduate social theorist, Marx's famous edict had struck a chord: "Philosophers have only interpreted the world; the point, however, is to change it".

Kenneth Gergen's (2015) work was useful to me in clarifying my position. Gergen argues that research in the social sciences should be 'future-forming'. He distinguishes between, on the one hand, social sciences which take from the natural science tradition an aim of mirroring reality, and on the other hand, a 'reflexive pragmatism' (Gergen, 2015:287) which sees research as situated within the social world, with an explicit ethical stance and aim for intervention, rather than just description or analysis. Thus Gergen insists that positionality is both unavoidable and useful. Judi Marshall, a leadership scholar and feminist researcher, offers a similar analysis but with a more personal slant. Her practice as an academic, she writes, has been 'living life as inquiry'. She defines this as follows:

> Living life as inquiry means that I hold open the boundary between research and my life generally. Often, therefore, I am aware that a theme I am pursuing in research is also relevant to some other area of

my life, and I will seek to work with, rather than suppress, that realisation. This can be highly enriching for both my personal and professional lives, and it can be demanding. (1999:160)

Marshall offers me, as a researcher, a way of working, which both acknowledges a normative motivation – what Gergen calls 'future-forming' – but also developing the ability to reflect and to challenge. Starting academic research never felt like wearing a cloak of objective neutrality, but it did allow me a certain distancing, an ability to look afresh at my professional world, and my own professional practice. I feel that both my research and my practice have benefited from this stance.

In short, I would argue that evidence and knowledge should be understood as socially situated, and positioned in relation to social, environmental and economic norms. Academic research should not deny this positionality, but should uncover and examine it. Robust research requires reflexivity on the part of the researcher, and transparency about the normative goals of the research. Review and interaction with colleagues within and outside academia is part of this process. With this combination of rigour, review and reflexivity, academic research can and should contribute to the achievement of social and environmental goals, with academics playing a part in advocacy as well as analysis.

Challenge 3: Interdisciplinarity
I have never associated myself with a particular academic discipline. My undergraduate degree, in social and political sciences, drew from anthropology, psychology, sociology, philosophy, political science, economics and international relations. My Masters degree, in environmental policy, was equally heterogeneous. Though my expertise is in the social sciences, I use evidence from the natural sciences. Understanding climate change requires forays into earth system science, meteorology, oceanography, geology and more besides, as well as some grasp of modelling and forecasting. There was never any need to define myself in disciplinary terms in my professional life, except for a general description of 'environmental policy' as my area of expertise.

In academia, though, disciplinarity remains an important concept. Many, but of course not all, academics maintain a 'home' discipline, a base from which to explore other perspectives and approaches. At conferences and events, I often hear phrases like "of course, as a geographer…..", or "from the perspective of sociology….". I can see the attraction of disciplinarity. When a group of scholars collaborate or communicate with one another, it is very useful to have a core of shared understanding, key concepts, leading thinkers and influential journals. Working within a discipline, a certain degree of shared knowledge and expertise can be assumed; critique, discussion and disagreement happens within that shared space. Without shared understandings, critical engagement is more difficult. I have often found this when engaging with natural scientists about the more social and political aspects of climate change. For example, few environmental scientists will have an academic insight into 'basic' sociological concepts such as power or

identity. While they do of course have some understanding of these concepts, they do not use them as analytic devices in the way that a sociologist does. Asking environmental scientists to see climate change through the lens of power relations or personal identity requires a certain amount of sociological groundwork to be laid.

Many real-world problems, however, flow over disciplinary boundaries, and cross-disciplinary collaboration is essential. Public health, for example, is as much sociological as it is medical. Climate change perhaps stretches cross-disciplinary collaboration to its limits, requiring strong links between the natural and social sciences, and benefiting from a wide range of perspectives within each of these. Addressing climate change also requires different scales of analysis, from psychology of the individual through to international relations; and from microbiology to earth systems science. This is evidenced by the wide range of disciplines involved in the reports of the Intergovernmental Panel on Climate Change.

In my research, therefore, I wanted to keep resolutely interdisciplinary. There have been times, however, when I have encountered difficulties as a result of my lack of grounding in one discipline. For example, when I submitted Paper 1 to the journal *Environmental Politics*, reviewers expressed surprise that I had not referred to certain 'classic' texts in relation to the concept of 'framing' which (like power or identity for sociologists) is a key concept in political science. When Paper 4 was submitted to *Political Studies*, I was called up for not distinguishing between 'valence' and 'salience'; again these are basic concepts in political science which I was not familiar with. Once introduced to these concepts, I did indeed find them useful analytical devices. However, it can feel awkward and sometimes rather exposed if you are not familiar with concepts that others see as 'basic' ideas, learned at undergraduate level. Despite these difficulties, maintaining an interdisciplinary stance means that I have produced research which is understandable and useful to researchers and practitioners from a wide range of backgrounds.

Challenge 4: Developing appropriate methods
In my previous work, I often used research techniques such as interviews, surveys, public consultation or case study analysis. As a result, I had a good grasp of the practicalities of these techniques, but I had not reflected on how certain techniques linked to specific theoretical positions or methodological outlooks. At the start of my doctoral research, my lack of grounding in what I saw as 'proper' research methods felt like a weakness. Through training in research methods, and reading about social science methodology, I began to reflect on linkages between theory, method and technique, and understood better that all research techniques carry with them a set of theoretical or epistemological assumptions. This insight, probably very obvious to career academics, was useful in structuring my research.

The concept of 'phronetic social science' (Schram et al., 2013) which I discuss in the methodology section provides a useful bridge between theory and method. It suggests that research should be problem-driven, and that mixed-

method approaches help to develop the sort of detailed, contextual, 'phronetic' understanding that I have aimed for in this work.

In the process of analysing and writing up data, I was helped by a course on 'Creative Methods' that I attended at the National Centre for Research Methods. By this stage, I had conducted an initial set of interviews with MPs, and was faced with a heap of intriguing but unstructured material. An insight from one of the contributors, Brian Heaphy, was very useful to me. He told me that "it is difficult to distinguish between analysis and writing when using qualitative data". This made me realise that writing is, at least in qualitative research, itself a form of analysis. Presentation cannot be separated from substance. It gave me the confidence to develop my idea of 'composite narratives', in essence a form of story-telling, that I used to present interview data in Paper 2. I found a way of writing about my data which I felt did justice to my research participants, and to the subject more generally.

The other useful insight from this course was a discussion on the concept of 'rigour' as applied to qualitative research. Again, as Brian Heaphy stated, "Rigour is a question of making explicit how you came to your findings". This made a lot of sense and again, helped me to justify and explain my own approach to research. In particular, it informed Paper 3, where I set out an explicit process for developing composite narratives.

Challenge 5: Writing for an academic audience, or learning to love peer review

Journal papers, though so central to the academic world, are rarely read beyond the university sector, in my field at least. In my previous career, whilst actively researching, writing and collaborating with academics, I very rarely read journal papers, and only once contributed to one. This is in part because most can only be accessed through subscription, but also because their style, tone and content makes them a difficult and sometimes frustrating read for practitioners. To a certain extent, I am critical of this; I think that there is a wealth of evidence and insight contained in journal papers across many disciplines that does not reach an audience of practitioners who could benefit greatly from the research. However, I do also value the discipline and rigour of academic publishing, and the process of peer review. This is why I chose to present my PhD as a series of published papers, rather than the traditional thesis format. I felt that I should learn the craft.

I certainly did learn, and made mistakes along the way. As I outline in my review of the papers above, my first attempt was the hardest. I wrote an account of the issue I was addressing, in the same way that I would write a policy report for a think-tank. Whilst I referred to various theories and evidence, I did not ground my account in one or more specific theoretical approaches. Reviewers criticised this. One, for example, wrote "the author suggests three factors that could encapsulate how politicians act – it is not clear where these are derived from… this would deserve stronger justification". Another noted a rather ad-hoc approach to theoretical insights, with different theoretical work being used to explain different empirical findings, in isolation from the wider background. These reviews were helpful in tightening my

analysis and making it less ad-hoc. In short, I was learning the explanatory value of theory, and the way in which theory and empirical evidence can be combined to strengthen analysis.

In subsequent papers, I took a different approach. Whilst in Paper 2 I remained resolutely interdisciplinary, I narrowed down to three specific theoretical insights, one from sociology, one from political theory and one from science and technology studies. This way, I could discuss the interplay between different theoretical traditions, whilst allowing a degree of context, and therefore rigour. In Paper 4, I focussed in on one theoretical offering, the theory of the 'representative claim', and found it rewarding to analyse my data through a relatively narrow theoretical lens.

This reflection could be summarised as follows: As my confidence in academic writing has developed, I have almost learned to love peer review. Though taking criticism is difficult, my reviewers have often helped me to clarify issues, and pointed me in the direction of useful analysis and bodies of writing which I often was not aware of. When I disagree with reviewers, their comments have helped me to firm up my own analysis, in order to justify my approach. Submitting papers to different journals with differing disciplinary foci has meant that I have had input from a wide range of viewpoints, which I have greatly appreciated.

1.2 Reflections on the future of politics and climate change

In this final section, I reflect on some themes that emerge from my work, both as an academic researcher and as a practitioner. I examine these in the light of the deeply unsettled political climate in the UK, Europe and the US, characterised by the upheavals of the EU referendum decision in the UK, and the election of President Trump. What is the relationship between current politics and the search for an appropriate response to climate change? How does this, in turn, relate to the more fundamental question of the place of human society on a changing planet? What ways can be envisaged of reconciling our own human politics with the biophysical constraints of life on this planet? My aim in this conclusion is to use my doctoral research as a springboard for a more speculative and wide-ranging discussion of these issues, one that is difficult to conduct within the confines of an academic paper; and to offer a personal perspective, rather than close academic argument.

Climate action and the political upheavals of 2016-18
When I began doctoral research, in 2014, there were few overt signs of the political upheaval that was to come, though the seeds may well have already been sown, not least in the 2008 financial crisis and the responses to it. My first round of interviews was set against the backdrop of the EU referendum campaign, in late 2015 and early 2016, and I could sense an increasing uncertainty amongst my interviewees as the vote approached. In the wake of the referendum result, there was little point in even attempting to approach politicians to talk about anything other than Brexit, as they struggled to come to terms with a deeply disorientating result. At the time of writing, negotiations with the EU stumble on, and the accompanying uncertainty and complexity creates a huge distraction from other political issues. It uses up most of the finite time available to politicians and parliament, leaving little time or energy for proactive policy in other areas.

In the interviews I conducted following the referendum, in 2017 and 2018, I noticed a growing diffidence among my interviewees. The Leave vote, Jeremy Corbyn's surprise ascent to leadership of the Labour Party, and the transatlantic ripples from Donald Trump's election, had profoundly unsettled UK politicians, particularly those from centrist traditions on both the Left and the Right. The rejection of established expertise, which has emerged as a defining characteristic of all of these events, left politicians wondering where their authority lay. This made it much harder for them to articulate, with any confidence, what a comprehensive political response to climate change (or, indeed, any other complex issue) might look like.

Climate strategies have, to date, relied heavily on expert-led processes. Such processes define the problem, using the consensus-building model of the IPCC, and scientific peer-review. Experts also define solutions. When I began working on climate change issues, in the late 1990s, climate advocates were small in number, and the debate was dominated by the more radical civil society organisations. Today, there is a well-developed climate 'establishment', which in the UK consists of many thousands of individuals

working in finance, industry and government as well as civil society. Climate 'experts' are everywhere. One example is the renewable energy industry, now employing 126,000 people in the UK (Renewable Energy Association, 2017) and 10.3 million worldwide (IRENA, 2018).

This is a step forward, in that these thousands of people are focussed on climate change (though their influence is still small compared to the enormity of the issue). Yet as this group of experts has grown, I have noticed an increased tendency to conduct discussions in the technical realm, without reflecting back on the need to develop a democratic mandate. There is a sentiment of doing this 'to' people, who, it is assumed, will either not notice, or will passively accept change. I discuss this tendency in Paper 5, where I argue that proponents of Earth System governance set out a top-down account of what they believe is scientifically necessary, without considering the conditions under which such actions might be democratically possible, let alone popular.

After the Brexit referendum, I set out my thoughts on this in a blog for Green Alliance. I argued firstly that environment and climate advocates were liable to groupthink, sharing a language and worldviews with each other but not with the wider world; and secondly that there was an increasing tendency to what I called 'climate action by stealth', whereby experts sought to impose solutions without making a public case for action, in the hope that people would not notice, would not care, or would be passively grateful for action taken on their behalf. Politicians use this strategy too, as I described in Paper 4: the 'surrogate claim', whereby politicians justify policies by any means other than carbon reduction. To my surprise, the reaction to my blog from fellow climate experts was a denial of the problem, and a reiteration of the need for expert-led processes.

All this leads me to believe that climate action is extremely vulnerable to the wider sweep of anti-expert sentiment, and the destabilisation of established centres of knowledge and power. Investigative journalist Kyla Mandel has mapped the links between Brexit-supporting lobby groups and the thinktanks who question the scientific consensus on climate change, and notes that these groups even share an office building in Westminster (Mandel, 2016). Early analyses of the motivations of Brexit and Trump voters highlight a lack of trust in government processes (Foster and Frieden, 2017; Friedman, 2016) which will inevitably impact on the expert-led model of climate action that we have come to rely on. Yet I do not see much serious debate about these issues among the climate experts I work with. In the final section below, I sketch out a tentative account of 'climate action as if democracy mattered', an attempt to reframe climate action to take account of these shifts. First, though, I reflect on the place of these political machinations, given that they are taking place on an increasingly unstable planet.

Political earthquakes and planetary upheavals
Significant political events like Brexit are often described using earth science metaphors: earthquakes and seismic shifts. Yet such metaphorical earthquakes distract attention from actual changes to earth systems.

Throughout my career, and increasingly during my doctoral research, I have found myself grappling with a disconnect between the daily preoccupations of politics, and the hugely significant changes to earth systems that humans are bringing about (some humans more than others, given disparities of wealth and resources). Changes to earth systems are rarely discussed in the political world. In early interviews, I approached this issue tentatively. I did not want to scare off my interviewees with questions about catastrophic climate shifts or the uncertainties surrounding our future on this planet. As my interviews continued, however, I came to realise that my difficulties in raising these issues stemmed in part from social and cultural constraints: what the sociologist Kari Norgaard (2011) calls 'social denial'. Individuals might privately have concerns, but do not feel that it is appropriate or useful to voice them. This sustains a collective silence. In later interviews, I was more insistent in my questioning. As I describe in Paper 5, I tried to take interviewees beyond what they felt comfortable discussing, yet still, I did not manage to bring about a serious debate with any politician on these questions.

For me, this raises a question which resonates well beyond the political sphere. Human society as we know it has, for nearly twelve thousand years, benefited from the climatic stability of the Holocene era. Are we too accustomed to the conditions of the Holocene to be capable of thinking beyond it, into an uncertain planetary future? The historian Dipesh Chakrabarty describes his realisation, upon studying climate science, that his own careful, critical scholarship, over many years,

> …had not really prepared me for making sense of this planetary conjuncture within which humanity finds itself today" (2008:199).

The novelist Amitav Ghosh, in his exploration of climate change and culture, speculates that future humans will look back on the current moment as a brief era when our planet seemed relatively inert. The Anthropocene, he says, poses challenges "to our commonsense understandings and beyond that to contemporary culture in general." (2016:9) A proper examination of our changing relationship with the planet is both dizzying and terrifying. It involves the realisation, memorably described by Noel Castree, that

> …humans are party to a huge and unrepeatable biophysical experiment in which we are not mere observers but a key part of the experiment itself. This is not, of course, to suggest we are somehow in control nor even pilots able to successfully steer the metaphorical (space) ship. (2014:444)

People who have spent time thinking about this, like many of us who work on climate change, are deeply affected. Many develop coping mechanisms, such as techniques of compartmentalisation, limiting the amount of time they spend considering climate change in order to preserve psychological wellbeing. A study by Nadine Andrews describes the different coping strategies that people working in the environment sector adopt in response to environmental threat. Some, for example, suppress "negative emotion about climate change out of fear that engagement will affect competency" at work (Andrews et al 2016:11).

Similarly, Lesley Head and Theresa Harada describe their findings of interviews with climate scientists:

> "Climate scientists distance themselves from stress and anxiety by downplaying the painful or troubling emotions …[this] enables them to keep going, but in ways that systematically downplay worst-case scenarios and embody a kind of everyday denial favouring positive scenarios." (2017:40)

For myself, I notice that I have developed my own coping mechanisms. Since my professional life is bound up in climate change, I make a conscious effort not to engage outside of working life. I sometimes feel bad that I don't contribute to initiatives in my community, but I have found that making climate change a professional rather than personal issue for me (this could be called 'weekend denial') has allowed me to continue working on an issue that is often deeply troubling.

Sometimes, though, the separation of personal and professional becomes more problematic. During the heatwave of summer 2018, as I was writing this paper, I noticed an outpouring of emotion from climate commentators. Shedding their professional veneer, one after another expressed uncertainty, fear and grief about climate change, illustrated with references to their own families and plans for the future (see Murray, 2018 for a summary).

The core difficulty is that climate change radically alters our conception of human agency. On the one hand, humans have had more influence than ever before imagined: we have made significant changes to planetary systems. On the other hand, we may have unleashed irreversible and possibly abrupt changes to these systems, leaving us with greatly diminished agency. We now face planetary instability which humans have contributed to, but have little control over; to which we may or may not be able to respond effectively. As Nigel Clark writes, "the 'human', in this way, appears to be at once advancing and withdrawing, centring and decentring itself" (2010:39). Those, like me, who advocate climate action, would like to offer a straightforward prescription for change. But we know that we may not convince others, and that even if we achieve the political, economic and social change we want to see, earth systems may not respond as we hope.

Economic and political uncertainties
Earth system change also raises questions about the foundations of our political beliefs and economic systems. The radical ecologist William Ophuls characterises the past 450 years as an 'Age of Exception', beginning with the 'discovery' of the New World and consequent abundant resources, for wealthy European nations at least. This abundance, Ophuls argues, created the conditions for social and economic liberalism, and indeed democracy itself. Liberal democracy is predicated on choice; abundance offers choice, whereas scarcity restricts it (Ophuls, 1992; see Dobson, 2013 for a discussion). A similar argument is put forward by Timothy Mitchell, in his conception of 'carbon democracy', though he is writing about the more recent exploitation of oil in the twentieth century:

The availability of abundant, low-cost energy allowed economists to abandon earlier concerns with the exhaustion of natural resources and represent material life instead as a system of monetary circulation – a circulation that could expand indefinitely without any problem of physical limits. (2011:234)

Mitchell writes that this economic abundance led to "a form of politics that was dematerialised and de-natured" (2011:235). Thus both Ophuls and Mitchell argue that our current political arrangements are shaped by the availability of natural resources and services such as fossil fuels and a stable climate. The obvious implication is that a move from abundance to scarcity, or from climate stability to instability, should be expected to result in significant shifts in political understanding, practices and institutions too.

The issue is not just that human societies depend on a stable climate. They also depend on throughputs of material – food, industrial products, buildings, transport – which in turn are fuelled by fossil energy (Urry, 2013). Social phenomena are influenced by, and influence, material systems (Shove, 2012; Urry, 2011). In short, our society is shaped by two material influences, which are now in conflict with each other: the availability of fossil energy on the one hand; and a stable climate system on the other.

In this short piece, I cannot hope to do justice to an immensely complex debate in political economy, namely the complex interrelationship between economic structures, political arrangements and earth system uncertainties. But it is interesting to note that the battle lines being drawn in climate politics beyond parliament are based on differing views on the relationship between capitalism and climate change. Radical thinkers and activists on the Left, spurred on by Naomi Klein's (2015) assertion that 'this changes everything', argue that nothing less than an end to capitalist economic systems will solve climate change. In a similar vein, Tim Jackson (2011) argues that economic growth, the goal of current economic systems, is incompatible with climate stability.

So far, these debates have largely remained outside the sphere of formal politics. Certainly, none of the MPs in my sample were advocating an end to capitalist economic systems. Yet, as Marxist scholars of the postpolitical argue, this could be because they are part of a system that sustains, and is sustained by, the current capitalist system (Machin, 2013; Mouffe, 2000; Swyngedouw, 2010). The emerging political movement aiming to prevent further exploitation of fossil fuels, uniting anti-pipeline protests in Canada, opposition to fracking in Lancashire and stakeholder activism in financial markets, may be the initial manifestation of significant change, in that it offers a fundamental challenge to the current economic world order.

In short, when set against the backdrop of earth system change, Brexit is a storm in a teacup (another earth science metaphor, of course).

Climate action as if democracy mattered

Since 2016, then, politics in the UK, Europe and the US has, in its own terms, experienced huge upheavals: the storm within the teacup. Put these in the context of changes to earth systems, the wider storm, and the uncertainties multiply. Is it even possible for democratic politics to cope with such radical change? My honest answer to this question is an emphatic 'I don't know'. But I am not sure whether it is even useful to ask this question. I do not think that it is possible to answer 'yes' with any confidence, yet saying a straight 'no' can only lead to fatalism.

Instead, when I present this research, I often ask the audience two different questions before I begin. The first is, "Do you want to live in a democracy?" Not surprisingly, the answer is an overwhelming yes. Then I ask, "Do you believe that political action is necessary to tackle climate change?" Again, nearly everyone says yes. These questions may seem obvious, but they lay bare the fundamental challenge. We want democracy, and we need politicians that can both be elected, and implement strategies to tackle climate change.

There are alternative conclusions. The veteran earth scientist James Lovelock famously said that "even the best democracies agree that when a major war approaches, democracy must be put on hold for the time being. I have a feeling that climate change may be an issue as severe as a war. It may be necessary to put democracy on hold for a while" (quoted in Hickman, 2010). As I discuss in Paper 5, this argument, that climate change is too important and difficult to solve through democratic means, is what Andrew Dobson describes as attempting to play "a card that will trump political debate and discussion" (2010: 765). But it raises more questions than it answers. Under what conditions, and under whose authority, would democracy be 'put on hold'? For how long, and with what checks on power? Despite the limitations to current democratic systems, which my research confirms, I find myself agreeing with Winston Churchill: "democracy is the worst form of Government except for all those other forms" (Hansard 11 November 1947 col 203-321).

What, then, might democratic strategies look like? My doctoral research has not provided me with a straightforward set of easily implementable solutions, but it has provided a certain degree of clarity on the way forward. I have discussed these briefly in each of the published papers, and draw them together below, in four principles.

Principle 1: Acknowledging the issue. The first, and most fundamental, task is to acknowledge the significance of the issue: to face up to the fragility of human society, and its dependence on increasingly volatile earth systems. As my research has shown, this is a very difficult thing to do. Like the rest of us, politicians find ways to avoid confronting the issue. Social denial, to use Norgaard's phrase, is everywhere. But I am convinced that such confrontation is necessary. The Iraq War veteran Ray Scranton wrote a haunting essay in the New York Times, *Learning how to die in the Anthropocene*. Scranton describes how he got through his tour of duty in Iraq not by denying the dangers, but by confronting and examining them, and considering his own

mortality. This, Scranton argues, is how we should be thinking of climate change:

> The choice is a clear one. We can continue acting as if tomorrow will be just like yesterday, growing less and less prepared for each new disaster as it comes, and more and more desperately invested in a life we can't sustain. Or we can learn to see each day as the death of what came before, freeing ourselves to deal with whatever problems the present offers without attachment or fear. (2013:1)

In practical terms, this might point to what seems like a mundane conclusion: politicians, and indeed all those who understand the significance of climate change, should talk openly and often about it. Following this, the 'climate by stealth' approach, described above, is self-defeating. The more it is discussed and vocalised, the more chance there is of building a mandate for action.

If this approach is taken to its logical conclusion, speaking up about climate change is far from mundane. It involves being explicit about many issues that are currently not discussed. In particular, it would involve a greater focus on the ways in which our society is currently dependent on high-carbon systems and practices (Urry, 2013). As John Barry notes, there has been far greater attention paid to defining future goals of 'sustainability' than to scrutinising our current state of what he terms 'actually existing sustainability' (2012). A more radical acknowledgement of climate change would therefore begin with an unflinching account of our current condition.

There would be no debate about aviation, for example, without reference to its climate impacts. Compare that to the recent discussions about a third runway at Heathrow, when climate change was barely mentioned (Cuff, 2018). There would be explicit discussion about the place of fossil fuel companies in financial markets, and an acknowledgement that meeting carbon targets would result in reorientation of these markets. The argument currently advanced outside parliament, by environmental protesters, to 'keep it in the ground', would become a mainstream political debate. (As an aside, a ban on fossil fuel extraction and trading would be an elegantly simple policy solution, compared to the complex array of climate policies currently in play.)

If such debate were forthcoming, there would be greater awareness of the distributional implications of climate change, both in terms of impacts and mitigation (Mendelsohn et al., 2006). In short, there would be full discussion of the social and economic implications of climate change impacts and actions.

This debate is as much a challenge for the academy as it is for those in political life. Climate change is sidelined in many political science journals, and insights from political science are not used to strengthen the findings of social research on climate change (Hayward, 2013). More generally, many scholars of history and social science have downplayed questions of environment or earth systems, instead putting affairs between humans centre-stage in their accounts, a tendency which Sarah Whatmore terms 'endemic humanism' (Whatmore, 2013:40).

From my vantage point in a sociology department, I found 'endemic humanism' everywhere. A notable exception was John Urry, a sociologist whose career was made in exploring the links between the social and the material, such as his exploration of the social implications of offshoring (2014). Whilst scholars of science and technology studies (STS) are very much concerned with this relationship between the social and the material, their object of study is often biological rather than geological. Most of the social scientists surrounding me seemed to see earth systems, if they noticed them at all, as an inert, insignificant backdrop to their study. Nigel Clark and Yasmin Gunaratnam, in noting this reluctance of many social scientists to engage with the earth sciences, ask, "what happens to our own disciplinary assumptions and investments when social inquiry engages fully with a mobile, forceful and dynamic earth?" (2016:3)

Consequently, as Noel Castree (2017; Castree et al., 2014) documents, debates about the impact of earth system changes and human societies have been dominated by the natural sciences. Where social science is included, it tends to be economics, which, given the focus on quantification, can be integrated into science-based models and scenarios. Analyses of contributions to the IPCC reveal the dominance of economics (Corbera et al., 2016). As I argue in Paper 5, following Castree, there is much more that social science could contribute to research on climate change and earth systems. This would require collaboration across disciplines, and different publication strategies. My own small contribution was to submit my final paper to a 'mainstream', natural science-led, though avowedly interdisciplinary, journal, Global Environmental Change. I have yet to find out whether this will be successful.

Principle 2: Building a representative claim. I argue in Papers 4 and 5 that any response to climate change needs to work with the grain of democracy. This may sound self-evident, but, as I discuss above, climate policy is becoming an increasingly technocratic domain, something done 'to' people. I have found Michael Saward's (2010) concept of the 'representative claim', the basis of Paper 4, to be a useful way of thinking about this. Democratic representation is not a case of passively accepting an account of public opinion, as defined by quantitative polling, for example, at one extreme. Neither is it productive to forge ahead without considering whether or not there is a public mandate for action. Building a 'representative claim' for climate change involves active development of a mandate. As Saward makes clear, it is not just politicians who can develop such claims; all those with a stake in the climate debate can do so.

As the debates around Brexit have unfolded, I have noticed very similar prescriptions for change from those searching for a less divisive and more productive post-Brexit politics. For example, two accounts of the 'new' working class, by Lisa McKenzie and Claire Ainsley, stress that policy-making elites need to cast aside assumptions about public opinion, and find new routes to democratic engagement and inclusive policy processes (Ainsley, 2018; Mckenzie, 2015). Ainsley writes that

> …politicians and policy-makers should take a giant leap of faith and start their policy thinking with where the public is at, building their policies up and out of their opinions (2018:ch7).

What these prescriptions have in common with my research and analysis is the stress on the need for a constant interplay between public views and values, on the one hand; and evidence about changes needed, on the other.

Principle 3: Greater use of deliberation. One practical way in which this dialogue could be carried out is through greater use of deliberative processes, in which citizens and experts meet on equal terms to debate and agree solutions (Dryzek and Niemeyer, 2008). This is not a substitute for electoral politics, but is a practical means by which elected politicians can explore the public mandate for action. The call for deliberation has been heard in the wake of the Brexit vote too (see for example Ainsley, 2018), with influential organisations including the Royal Society of Arts promoting greater use of deliberative processes. Recently, two Select Committees in the UK Parliament commissioned a Citizens' Assembly to debate social care issues – another long-term, knotty issue.

Such processes have been used increasingly in the Republic of Ireland. The findings of a Citizens' Assembly led to the recent referendum in favour of the change to abortion laws. Ireland has also held a Citizens' Assembly on climate change. A representative group of citizens spent two weekends hearing from, and debating with, climate scientists and experts on issues including transport, agriculture and energy; and deliberated as a group on how Ireland as a nation should respond to climate change. Given the time and space to learn, think and discuss, citizens offered up a surprisingly radical and confident set of answers to a tricky question. 80% of the group, for example, said they would be willing to pay higher taxes on carbon intensive activities (The Citizens' Assembly, 2018). Yet it is almost an article of faith amongst politicians that people will not support calls for increased taxation.

It could be that such discussions are actually more productive when political and economic conditions are more fragile. Put simply, if the current model is broken, there is more of an appetite to find radical fixes. For example, researchers criticising the concept of economic growth have always found a more willing audience at times of economic turmoil (Jackson, 2017).

An important principle for greater deliberation is that its relationship to the formal political process should be clear. In other words, the outcomes of deliberative processes need to be considered and incorporated into the decision-making process; listening is as important as speaking (Dobson, 2012). A recent study of senior politicians across three countries (the UK, Australia and New Zealand) by Carolyn Hendriks and Jennifer Lees-Marshment (2018) revealed that politicians currently rely on 'hidden' forms of engagement with publics, through informal, spontaneous encounters, and that they would value more structured approaches to engagement. They recommend that

> …informal interactions between political leaders and citizens be 'designed in' in and around structured participatory processes… those making political decisions are more likely to engage in, and be responsive to, participatory processes (and their recommendations) if they are given opportunities to connect informally with citizens.
> (Hendriks and Lees-Marshment, 2018:15)

Seen in this way, deliberation is not a substitute for representative democracy, but a way of strengthening it, through ensuring that decisions are better informed.

Principle 4: Policies that engage. In 2017, I presented my research at a Royal Society 'Science Plus' meeting, a gathering of climate experts from business, civil society and academia. I was struck that, amongst the sixty or more people attending, there were only two of us whose talks included discussion of whether and how the climate policies they were proposing would garner democratic support. The assumption that many seemed to be working to was that it was the role of experts to design technically optimal policies, which would then be handed to the politicians to 'sell in' to voters.

This seemed to me to be the wrong way round. I argued that it was both legitimate and necessary to ask of every climate policy, 'does this build public support?' It was generally accepted, at that meeting, that technical feasibility and efficiency were sensible criteria by which to judge policy proposals such as carbon taxes, investment support mechanisms and legislated standards for vehicles or other products. My suggested addition to this list certainly raised a few eyebrows, yet it is a conclusion that emerges very clearly from my research. Policies should be meaningful, in two senses: they should provide a meaningful, material contribution to carbon reduction; and they should be meaningful to people and communities.

Examples of such policies might include local-level energy solutions, such as community ownership of energy assets, and local management of energy supply and demand through smart grids and ICT-enabled infrastructure. As discussed above, limiting fossil fuel extraction, through disclosure, divestment measures or bans on further exploration, would be further examples. Institutional changes could include increased use of deliberative mechanisms to set climate strategy, such as Ireland's Citizens' Assembly discussed above, or the institutions in place in Wales, Hungary and Sweden which offer representation of future citizens in current debates (Urry, 2016). A particular focus on young people could be effective. Research indicates that, whilst young people are less engaged in formal politics, they look for other means to engage politically and demonstrate citizenship (Hayward et al., 2015; Henn and Foard, 2012) and in ten countries, including Canada, the US, India, Pakistan and the Netherlands, young people have brought lawsuits against their governments, urging further climate action (Our Children's Trust, 2018).

Hand in hand with greater political engagement comes the need for a more sophisticated understanding of climate change as a social issue, not just a technical problem to be solved. On my daily trawl through Twitter, I am in turns amused and enraged by comments on new technologies that could

"save the planet". A recent piece in *The Atlantic*, for example, promised that "Climate change can be stopped by turning air into gasoline" (Meyer, 2018). There seem to be increasing numbers of very wealthy entrepreneurs putting forward climate 'solutions', such as Richard Branson's Earth Challenge, and Elon Musk's ultimate solution to problems on planet Earth: colonizing Mars. As Musk has said, "You back up your hard drive… maybe we should back up life, too?" (quoted in Heath, 2015).

What strikes me about these proposals is that they offer ever-more ambitious technological 'solutions' as an alternative to, or perhaps a distraction from, changes to social and economic systems. The idea of any significant change to the social order, distribution of wealth or powers of governments appears so preposterous that migration to Mars begins to seem more plausible than social reform and environmental governance on our own planet.

I do not deny that technological innovation is a crucial ingredient in climate action. But it becomes part of the problem if promises of new technology delay or distract from mitigation efforts (Markusson et al., 2017) and from the possibilities offered by social or political change. My aim here is not to enter a detailed discussion about the role of technology in climate mitigation, but to suggest that climate advocates would benefit greatly from making common cause with social reformers.

I have picked out these four principles as they are the ones which emerge most directly from my doctoral research, and from the current political situation in the UK. What I offer is far from a complete prescription. As I begin to discuss here, a full response to climate change requires a close examination not just of democratic processes, but of the structures of the global economy, power and wealth. My focus on politicians, as one particular group of people (albeit a relatively influential group) should be seen as a complement to, not a substitute for, more structurally focussed analyses. They are not separate things, after all: as my research shows clearly, politicians constantly deliberate about their own room for manoeuvre within what they see as the established order of things.

Yet, to return to my starting point for this project, much discussion of the politics and governance of climate change has remained in the abstract realm of systems and structures. I have tried to show how such structures play out in the lives of one important group of people: Members of Parliament. In doing so, I hope I have shown that a proper response to climate change is personal as well as structural. It must address deeply social questions about how individuals see themselves and their role within society, and, indeed, on this increasingly changeable planet that is home to us all.

Part D: Consolidated bibliography and Annexes

Consolidated bibliography

Adams T.E., 2008. A Review of Narrative Ethics. *Qualitative Inquiry* 14(2), 175–194.

Ainsley, C., 2018. *The new working class: how to win hearts, minds and votes.* Policy Press, Bristol.

Andrews, N., et al., 2016. Between intention and action: psychosocial factors influencing action on climate change in organisations, in: Leal Filho, W. (Ed.), *Innovation in Climate Change Adaptation*. Springer.

Atkinson, P, 2010. The contested terrain of narrative analysis – an appreciative response. *Sociology of Health & Illness* 32(4), 661–662.

Bachrach, P. and Baratz, M.S., 1962. Two Faces of Power. *The American Political Science Review* 56 (4), 947–952.

Bai, X., et al., 2016. Plausible and desirable futures in the Anthropocene: A new research agenda. *Global Environmental Change* 39 (Supplement C), 351–362.

Bailey, I.and Revill, P., 2015. Re-politicizing climate governance, in: Bäckstrand, K., Lövbrand, E. (Eds.), *Research Handbook on Climate Governance*. Edward Elgar Publishing, Cheltenham.

Baker, P., 2004. "Unnatural Acts": Discourses of homosexuality within the House of Lords debates on gay male law reform. *Journal of Sociolinguistics* 8 (1), 88–106.

Baker, P., et al., 2008. A useful methodological synergy? Combining critical discourse analysis and corpus linguistics to examine discourses of refugees and asylum seekers in the UK press. *Discourse Society* 19 (3), 273–306.

Baker, P. and Levon, E., 2015. Picking the right cherries? A comparison of corpus-based and qualitative analyses of news articles about masculinity. *Discourse & Communication* 9 (2), 221–236.

Barry, J., 2012. *The politics of actually existing unsustainability: human flourishing in a climate-changed, carbon constrained world.* Oxford University Press, Oxford.

Beck, U., 1992. *Risk Society: Towards a new modernity*. Sage Publications.

Beck, U., 2006. Living in the world risk society. *Economy and Society* 35 (3), 329–345.

Benford, R.D. and Snow, D.A., 2000. Framing Processes and Social Movements: An Overview and Assessment. *Annual Review of Sociology* 26, 611–639.

Bernstein, S. and Hoffmann, M., 2018. The politics of decarbonization and the catalytic impact of subnational climate experiments. *Policy Sciences* 1–23.

Biermann, F., et al., 2012. Navigating the Anthropocene: Improving Earth System Governance. *Science* 335, 1306–1307.

Biermann, F., et al., 2012. Transforming governance and institutions for global sustainability: key insights from the Earth System Governance Project. *Current Opinion in Environmental Sustainability* 4(1), 51–60.

Biermann, F., 2014. The Anthropocene: A governance perspective. *The Anthropocene Review* 1(1), 57–61.

Biermann, F., 2014. *Earth System Governance: World Politics in the Anthropocene*. MIT Press.

Blundy, A., 2017. Life of the mind: A perfect lie. *Prospect Magazine,* June. Available at: https://www.prospectmagazine.co.uk/magazine/life-of-the-mind-a-perfect-lie (accessed 15 August 2017).

British National Corpus, 2008. *BNC Sampler: XML edition.* Available at: http://www.natcorp.ox.ac.uk/corpus/sampler/sampler.pdf (accessed 5 July 2016).

Brito, L., Stafford-Smith, M., 2012. *State of the Planet Declaration*. Planet Under Pressure: New Knowledge Towards Solutions conference, London.

Burke E., 1774. *Speech to the Electors of Bristol.* Available at: http://oll.libertyfund.org/titles/burke-select-works-of-edmund-burke-vol-4 (accessed 26 June 2017).

Caldas-Coulthard, C.R., Moon, R., 2010. "Curvy, hunky, kinky": Using corpora as tools for critical analysis. *Discourse Society* 21(1), 99–133.

Carter, N., 2013. Greening the mainstream: party politics and the environment. *Environmental Politics* 22(1): 73–94.

Carter, N., 2014. The politics of climate change in the UK. *WIREs Climate Change* 5(3), 423–433.

Carter, N., Jacobs, M., 2014. Explaining Radical Policy Change: The Case of Climate Change and Energy Policy Under the British Labour Government 2006–10. *Public Administration* 92(1), 125–141.

Carter, N., Clements, B., 2015. From 'greenest government ever' to 'get rid of all the green crap': David Cameron, the Conservatives and the environment. *British Politics* 10(2), 204–225.

Castree, N., 2014. The Anthropocene and Geography I: The Back Story. *Geography Compass* 8(7), 436–449.

Castree, N., et. al., 2014. Changing the intellectual climate. *Nature Climate Change* 4(9), 763–768.

Castree, N., 2017. Speaking for the 'people disciplines': Global change science and its human dimensions. *The Anthropocene Review* 4(3), 160–182.

Chappell, L., 2006. Comparing Political Institutions: Revealing the Gendered "Logic of Appropriateness." *Politics & Gender* 2(2), 223–235.

Childs, S., 2004. A feminised style of politics? Women MPs in the house of commons. *British Journal of Politics and International Relations* 6(1), 3–19.

Childs, S., 2013. Negotiating Gendered Institutions: Women's Parliamentary Friendships. *Politics & Gender* 9(2), 127–151.

Clark, N., 2010. Volatile Worlds, Vulnerable Bodies: Confronting Abrupt Climate Change. *Theory Culture Society* 27(2-3), 31–53.

Clark, N., 2011. *Inhuman nature: sociable life on a dynamic planet*. Sage, London.

Clark, N., 2014. Geo-politics and the disaster of the Anthropocene. Sociological Review 62, 19–37.

Clark, N., Gunaratnam, Y., 2017. Earthing the Anthropos? From 'socializing the Anthropocene to geologizing the social. *European Journal of Social Theory* 20(1),146-163.

Coady, D., et. al., 2017. How Large Are Global Fossil Fuel Subsidies? *World Development* 91, 11–27.

Cobb, R.W., Coughlin, J.F., 1998. Are elderly drivers a road hazard?: Problem definition and political impact. *Journal of Aging Studies* 12(4), 411–427.

Committee on Climate Change, 2016. *Meeting Carbon Budgets - 2016 Progress Report to Parliament.*

Committee on Climate Change, 2017. 2017 *Report to Parliament - Meeting Carbon Budgets: Closing the policy gap*.

Corbera, E., Calvet-Mir, L., Hughes, H., Paterson, M., 2016. Patterns of authorship in the IPCC Working Group III report. *Nature Climate Change* 6(1), 94–99.

Crenson, M.A., 1971. *The un-politics of air pollution; a study of non-decisionmaking in the cities.* Johns Hopkins Press, Baltimore.

Crewe, E., 2015. *The House of Commons: An Anthropology of MPs at Work.* Bloomsbury Publishing, London.

Cuff, M., 2018. Heathrow expansion: Committee on Climate Change reminds government of emissions commitments. *Business Green*. 18 July. Available at: https://www.businessgreen.com/bg/news-analysis/3034298/heathrow-expansion-must-be-considered-in-context-of-paris-says-committee-on-climate-change (accessed 13.9.2018)

Dalby, S., 2013. The geopolitics of climate change. *Political Geography* 37, 38–47.

Davidson, S., Elstub, S., 2014. Deliberative and Participatory Democracy in the UK. *The British Journal of Politics & International Relations* 16(3), 367–385.

Dayrell, C., Urry, J., 2015. Mediating climate politics The surprising case of Brazil. *European Journal of Social Theory* 18 (3), 257–273.

de Wilde, P., 2013. Representative claims analysis: theory meets method. *Journal of European Public Policy* 20(2): 278–294.

Demeritt, D., 2001. The Construction of Global Warming and the Politics of Science. *Annals of the Association of American Geographers* 91 (2), 307–337.

Department for Business, Energy and Industrial Strategy, 2017. *Energy and Climate Change Public Attitude Tracker, Wave 21.*May.

Desforges, L., 2004. The formation of global citizenship: international non-governmental organisations in Britain. *Political Geography* 23(5): 549–569.

Dobson, A., 2000. *Green political thought.* 3rd ed. Routledge, London.

Dobson, A., 2010. Democracy and Nature: Speaking and Listening. *Political Studies* 58(4): 752–768.

Dobson, A., 2013. Political Theory in a Closed World: Reflections on William Ophuls, Liberalism and Abundance. *Environmental Values* 22(2), 241–259.

Dobson, A., 2014. *Listening for democracy: Recognition, representation, reconciliation*. Oxford University Press, Oxford.
Dobson, A., Hamilton, L., 2016. Representation and Political Theory. *European Political Science* 15(4), 570-578.

Douglas, M., 1986. *How Institutions Think*. Syracuse University Press.

Downs, A., 1972. Up and Down with Ecology - the "Issue-Attention Cycle." *Public Interest* 28, 38–51.

Dryzek, J. S., Niemeyer, S., 2008. Discursive Representation. *The American Political Science Review* 102(4): 481–493.

Dryzek, J.S., 2014. Institutions for the Anthropocene: Governance in a Changing Earth System. *British Journal of Political Science* 46(4), 937-956.

Eckersley, R., 2004. *The green state: rethinking democracy and sovereignty.* MIT Press, Cambridge, Mass.

Fairclough, N., 2000. *New Labour, New Language?* Routledge, New York.

Farstad, F., Carter, N., Burns, C., 2018. What does Brexit Mean for the UK's Climate Change Act? *The Political Quarterly* 89(2), 291-297.

Fawcett, A.A., et al., 2015. Can Paris pledges avert severe climate change? *Science* 350(6265), 1168–1169.

Fenno Jr., R., 1977. U.S. House Members in their Constituencies: An Exploration. *The American Political Science Review* 71 930, 883–917.

Fielding, K.S., et. al., 2012. Australian politicians' beliefs about climate change: political partisanship and political ideology. *Environmental Politics* 21(5), 712–733.

Fløttum, K., et al., 2014. Representations of the future in English language blogs on climate change. *Global Environmental Change* 29, 213–222.

Foster, C., Frieden, J., 2017. Crisis of trust: Socio-economic determinants of Europeans' confidence in government. *European Union Politics* 18(4), 511–535.

Friedman, U., 2016. Trust in Government Is Collapsing Around the World. The Atlantic. July. Available at: https://www.theatlantic.com/international/archive/2016/07/trust-institutions-trump-brexit/489554/ (accessed 6.9.2018)

Fujimura, J.H., 1987. Constructing "Do-Able" Problems in Cancer Research: Articulating Alignment. *Social Studies of Science* 17(2), 257–293.

Future Earth, 2018. *Future Earth: Research for global sustainability.* Available at: http://www.futureearth.org/home (accessed 9.10.18).

Geels, F.W., 2005. The dynamics of transitions in socio-technical systems: A multi-level analysis of the transition pathway from horse-drawn carriages to automobiles (1860–1930). *Technology Analysis & Strategic Management* 17(4), 445–476.

Geels, F.W., 2014. Regime Resistance against Low-Carbon Transitions: Introducing Politics and Power into the Multi-Level Perspective. *Theory Culture Society* 31(5), 21–40.

Geels, F.W., et.al., 2017. The Socio-Technical Dynamics of Low-Carbon Transitions. *Joule* 1(3), 463–479.

Gergen, K. J., 2015. From Mirroring to World-Making: Research as Future Forming. *Journal for the Theory of Social Behaviour 45*(3): 287–310.

Ghosh, A., 2016. *The great derangement: Climate change and the unthinkable*. The University of Chicago Press, Chicago.

Giddens, A., 2009. *The politics of climate change.* Polity, Cambridge.

Gifford, R., 2011. The dragons of inaction: Psychological barriers that limit climate change mitigation and adaptation. *American Psychologist* 66(4), 290–302.

Greater Manchester Low Carbon Hub, 2017. *Greater Manchester Low Carbon Hub*. Available at: http://gmlch.ontheplatform.org.uk/ (accessed 26.6.2017).

Hajer, M.A., Forester, J., 1993. Discourse Coalitions And The Institutionalisation of Practice: The Case of Air Pollution, *in*: F. Fisher and J.

Forester, eds., *The Argumentative Turn in Policy Analysis and Planning. Duke University Press, Durham, N.C.*

Hajer, M.A., 2000. *The politics of environmental discourse: ecological modernization and the policy process*. Clarendon Press, Oxford.

Hajer, M. et al., 2015. *Beyond Cockpit-ism: Four Insights to Enhance the Transformative Potential of the Sustainable Development Goals.* Sustainability 7(2), 1651–1660.

Haraway, D., 1988. Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective. *Feminist Studies* 14(3), 575–599.

Haraway, D.J., 2014. *Anthropocene, Capitalocene, Chthulucene: Staying with the Trouble*. Available at: http://opentranscripts.org/transcript/anthropocene-capitalocene-chthulucene/ (accessed 24.11.2016)

Hayward, B., 2013. Re-imagining politics in a changing climate: A review essay. *Political Science* 65(1), 118–124.

Hayward, B., Selboe, E., Plew, E., 2015. Citizenship for a changing global climate: Learning from New Zealand and Norway. *Citizenship, Social and Economics Education* 14(1), 19–27.

Head, L., Harada, T., 2017. Keeping the heart a long way from the brain: The emotional labour of climate scientists. *Emotion, Space and Society* 24, 34–41.

Heath, C., 2015. Elon Musk Is Ready to Conquer Mars. *GQ.* 12 December 2012.

Hendriks, C.M., Lees-Marshment, J., 2018. Political Leaders and Public Engagement: The Hidden World of Informal Elite–Citizen Interaction. *Political Studies* advance online publication, 1–21.

Henn, M., Foard, N., 2012. Young People, Political Participation and Trust in Britain. *Parliamentary Affairs* 65(1), 47–67.

Hickman, L., 2010. James Lovelock: "Fudging data is a sin against science." *The Guardian*. 29 March.

Horton, D., 2003. Green distinctions: the performance of identity among environmental activists. *The Sociological Review* 51(s2), 63–77.

Hulme, M., 2009. *Why we disagree about climate change: understanding controversy, inaction and opportunity*. Cambridge University Press, Cambridge.

IPCC, 2007. *Climate Change 2007:Synthesis Report.*

IPCC, 2014. *Climate change 2013: the physical science basis: Working Group I contribution to the Fifth assessment report of the Intergovernmental Panel on Climate Change.* Cambridge University Press, New York.

IRENA, 2018. *Renewable Energy Jobs Reach 10.3 Million Worldwide in 2017*. May. Available at: /newsroom/pressreleases/2018/May/Renewable-Energy-Jobs-Reach-10-Million-Worldwide-in-2017 (accessed 9.6.18).

Jackson, T., 2005. *Motivating Sustainable Consumption: A review of evidence on consumer behaviour and behavioural change.* Sustainable Development Research Network.

Jackson, T., 2011. *Prosperity without growth: economics for a finite planet.* Earthscan, London.

Jackson, T., 2017. *Prosperity without growth: foundations for the economy of tomorrow*. 2nd ed. Routledge, London.

Jacobs, A.M., 2011, *Governing for the long term: democracy and the politics of investment*. Cambridge University Press, Cambridge.

Jasanoff, S., 2010, A New Climate for Society. *Theory, Culture & Society* 27(2–3), 233–253.

Johnson, E. et al., 2014. After the Anthropocene: Politics and geographic inquiry for a new epoch. *Progress in Human Geography* 38(3), 439–456.

Kingdon, J.W., 1995. *Agendas, alternatives, and public policies*, 2nd ed. Longman, New York.

Klein, N., 2015. *This changes everything: capitalism vs. the climate.* Penguin books, London.

Kuyper, J., et al., 2018. Non-state actors in hybrid global climate governance: justice, legitimacy, and effectiveness in a post-Paris era. *Wiley Interdisciplinary Reviews: Climate Change* 9(1), e497.

Kvale, S., Brinkmann, S., 2015. *InterViews: learning the craft of qualitative research interviewing.* Sage, Los Angeles.

Lachapelle, E., Paterson, M., 2013. Drivers of national climate policy. *Climate Policy* 13(5), 547–571.

Laidley, T., 2013. Climate, class and culture: political issues as cultural signifiers in the US. *Sociological Review* 61(1), 153–171.

Landman, T., 2012. Phronesis and narrative analysis, in: Flyvbjerg, B., Landman, T., Schram, S. (eds.), *Real Social Science*. Cambridge University Press, Cambridge.

Lash, S., Szerszynski, B., Wynne, B. (Eds.), 1996. *Risk, environment and modernity: towards a new ecology*. Sage, London.

Latour, B., 1983. Give me a laboratory and I will raise the world, in: Knorr-Cetina, K., and Mulkay, M., eds., Science Observed: Perspectives on the Social Study of Science. Sage, London.

Latour, B., 1987. *Science in action: how to follow scientists and engineers through society.* Harvard University Press, Cambridge, Mass.

Latour, B., 2004. Why Has Critique Run out of Steam? From Matters of Fact to Matters of Concern. *Critical Inquiry* 30(2), 225–248.

Latour, B., 2007. Turning Around Politics: A Note on Gerard de Vries' Paper. *Social Studies of Science* 37(5), 811–820.

Latour, B., 2014. Agency at the Time of the Anthropocene. *New Literary History* 45 (1), 1–18.

Law, J., 2004, *After Method: Mess in social science research.* London: Routledge.

Lewis, O.A., Steinmo, S., 2012. How Institutions Evolve: Evolutionary Theory and Institutional Change. *Polity* 44(3), 314–339.

Lizzeri, A., Persico, N., 2001. The Provision of Public Goods under Alternative Electoral Incentives. *The American Economic Review* 91, 225–239.

Lockwood, M., 2011. Does the framing of climate policies make a difference to public support? Evidence from UK marginal constituencies. *Climate Policy* 11(4), 1097–1112.

Lockwood, M., 2013. The political sustainability of climate policy: The case of the UK Climate Change Act. *Global Environmental Change* 23(5), 1339–1348.

Lövbrand, E., et. al., 2009. Earth System Governmentality: Reflections on science in the Anthropocene. *Global Environmental Change* 19(1), 7–13.

Lövbrand, E., et al., 2015. Who speaks for the future of Earth? How critical social science can extend the conversation on the Anthropocene. *Global Environmental Change* 32, 211–218.

Lovenduski, J., 2012. Prime Minister's questions as political ritual. *British Politics* 7(4), 314–340.

Machin, A., 2013. *Negotiating climate change: radical democracy and the illusion of consensus.* Zed Books, London.

Malley, R., 2012. *The institutionalisation of gendered norms and the substantive representation of women in Westminster and the Scottish parliament* (Ph.D. thesis). University of Bristol.

Mandel, K., 2016. *Revealed: the climate science deniers behind the Brexit campaign*. OpenDemocracy. Available at: https://www.opendemocracy.net/uk/kyla-mandel/revealed-climate-science-deniers-behind-brexit-campaign

Mansbridge, J., 2003. Rethinking Representation. *American Political Science Review* 97(4), 515–528.

March, J.G., Olsen, J.P., 1984. The New Institutionalism: Organizational Factors in Political Life. *The American Political Science Review* 78(3), 734–749.

Markard, J., et. al., 2012. Sustainability transitions: An emerging field of research and its prospects. *Research Policy* 41(6), 955–967.

Markham, A., 2012. Fabrication as Ethical Practice. *Information, Communication & Society* 15(3), 334–353.

Markusson, N., et. al., 2017. The political economy of technical fixes: The (mis)alignment of clean fossil and political regimes. *Energy Research & Social Science* 23, 1–10.

Marres, N., 2005. *No Issue, No Public: Democratic Deficits After the Displacement of Politics.* Thesis (PhD). Universiteit van Amsterdam.

Marshall, J., 1999. Living Life as Inquiry. *Systemic Practice and Action Research* 12(2), 155–171.

McKay, J., 2011. 'Having it All?' Women MPs and Motherhood in Germany and the UK. *Parliamentary Affairs* 64(4), 714–736.

Mckenzie, L., 2015. *Getting by: Estates, class and culture in austerity Britain.* Policy Press, Bristol.

McKibben, B., 2015. McKibben to Obama: We can't negotiate over the physics of climate change. *Grist*. Available at: http://grist.org/climate-energy/mckibben-to-obama-we-cant-negotiate-over-the-physics-of-climate-change/ (accessed 14 July 2017).

Mendelsohn, R., Dinar, A., Williams, L., 2006. The distributional impact of climate change on rich and poor countries. *Environment and Development Economics* 11(2), 159–178.

Meyer, R., 2018. Climate Change Can Be Reversed by Turning Air Into Gasoline. *The Atlantic*. June. Available at: https://www.theatlantic.com/science/archive/2018/06/its-possible-to-reverse-climate-change-suggests-major-new-study/562289/ (accessed 9.7.18).

Meyerson, D.E., Scully, M.A., 1995. Tempered Radicalism and the Politics of Ambivalence and Change. *Organization Science* 6(5), 585–600.

Mishler, E.G., 2005. Patient stories, narratives of resistance and the ethics of humane care: A la recherche du temps perdu. *Health* 9 (4): 431–451.

Mitchell, T., 2011. *Carbon democracy: political power in the age of oil.* Verso, London.

Moir, E., Leyshon, M., 2013. The design of decision-making: Participatory budgeting and the production of localism. *Local Environment* 18(9), 1002–1023.

Molin, S., 2007. The Hansard hazard: gauging the accuracy of British parliamentary transcripts. *Corpora* 2(2), 187–210.

Monaghan, E., 2013. Making the Environment Present: Political Representation, Democracy and Civil Society Organisations in EU Climate Change Politics. *Journal of European Integration* 35(5), 601–618.

Morris, Z.S., 2009. The Truth about Interviewing Elites. *Politics* 29(3), 209–217.

Mouffe, C., 2000. *The democratic paradox*. Verso, London.

Murray, J., 2018. Fear and loathing on the climate beat. *Business Green.* 7 August. Available at: https://www.businessgreen.com/bg/blog-post/3037233/fear-and-loathing-on-the-climate-beat

Norgaard, K.M., 2006. 'We Don't Really Want to Know' Environmental Justice and Socially Organized Denial of Global Warming in Norway. *Organization & Environment* 19(3): 347–370.

Norgaard, K.M., 2011. *Living in denial: climate change, emotions, and everyday life.* MIT Press, Cambridge, Mass.

Norton, P., 1994. The Growth of the Constituency Role of the MP. *Parliamentary Affairs* 47(4): 705–721.

Norton, P., 1997. Roles and behaviour of British MPs. *The Journal of Legislative Studies* 3(1), 17–31.

Norton, P., 2012. Speaking for the people: a conservative narrative of democracy. *Policy Studies* 33(2): 121–132.

Oakley, A., 1988. Interviewing Women: A Contradiction in Terms. In: Roberts H (ed.), *Doing feminist research*, Routledge, London.

Onwuegbuzie, A.J., Leech, N.L., 2005. On Becoming a Pragmatic Researcher: The Importance of Combining Quantitative and Qualitative Research Methodologies. *International Journal of Social Research Methodology* 8(5), 375–387.

Ophuls, W., 1992. *Ecology and the politics of scarcity revisited: the unraveling of the American dream.* W.H. Freeman, New York.

Orbach, S., 2000. *The Impossibility of Sex*. London: Penguin.

Oreskes, N., Conway, E.M., 2012. *Merchants of doubt: how a handful of scientists obscured the truth on issues from tobacco smoke to global warming.* Bloomsbury, London.

Our Children's Trust, 2018. *Securing the legal right to a stable climate.* Available at: https://www.ourchildrenstrust.org/ (accessed 9.7.18).

Partington, A., 2012. Corpus Analysis of Political Language, in: *The Encyclopedia of Applied Linguistics.* Blackwell.

Perren, L., Dannreuther, C., 2013. Political signification of the entrepreneur: Temporal analysis of constructs, agency and reification. *International Small Business Journal* 31(6), 603–628.

Phelan, L., Henderson-Sellers, A., Taplin, R., 2012. The Political Economy of Addressing the Climate Crisis in the Earth System: Undermining Perverse Resilience. *New Political Economy* 18(2), 198–226.

Pidgeon, N., 2012. Public understanding of, and attitudes to, climate change: UK and international perspectives and policy. *Climate Policy* 12(sup01), S85–S106.

Piper, H., Sikes, P., 2010. All Teachers Are Vulnerable but Especially Gay Teachers: Using Composite Fictions to Protect Research Participants in Pupil-Teacher Sex-Related Research. *Qualitative Inquiry* 16(7), 566–574.

Puwar, N., 1997. Reflections on Interviewing Women MPs. *Sociological Research Online*. Available at: http://socresonline.org.uk/2/1/4.html#BALL (accessed 19 May 2015).

Puwar, N., 2004. *Space Invaders: Race, Gender and Bodies Out Of Place.* Oxford: Berg.

Rayson, P., 2008. From key words to key semantic domains. *International Journal of Corpus Linguistics* 13(4), 519–549.

Reay, D.S., 2010. Lessons from Climategate. *Nature* 467,157.

Renewable Energy Association, 2017. *Renewable Energy View: The authoritative annual report for the UK renewable energy sector.* Renewable Energy Association.

Rhodes, R.A.W., 2011. *Everyday life in British government.* Oxford University Press, Oxford ; New York.

Rickards, L., et. al., 2014. Barriers to effective climate change mitigation: the case of senior government and business decision makers *Wiley Interdisciplinary Reviews: Climate Change* 5 (6),753–773

Riessman C.K., 2005. Narrative Analysis, in: Kelly, N.,et al. (eds), *Narrative, Memory and Everyday Life.* University of Huddersfield, Huddersfield.

Riessman, C.K., 2008. *Narrative methods for the human sciences.* Sage Publications, Los Angeles.

Rockström et.al., 2009. Planetary Boundaries: Exploring the Safe Operating Space for Humanity. *Ecology & Society* 14(2).

Rockström, J., et al., 2009. A safe operating space for humanity. *Nature* 461, 472–475.

Saunders, B., et. al., 2015. Anonymising interview data: challenges and compromise in practice. *Qualitative Research* 15(5), 616–632.

Saward, M., 2006. The Representative Claim. *Contemporary Political Theory* 5(3), 297–318.

Saward, M., 2010. *The Representative Claim.* Oxford University Press, Oxford.

Saward, M., 2014. Shape-Shifting Representation. *American Political Science Review* 108(04), 723–736.

Schaffer, L.M., Bernauer, T. 2014. Explaining government choices for promoting renewable energy. *Energy Policy* 68(SuppC), 15–27.

Schram, S.F., et al., 2013. *Political* Political Science: A Phronetic Approach. *New Political Science* 35(3), 359–372.

Scranton, R., 2013. Learning How to Die in the Anthropocene. *The New York Times*. 10 November.

Shove, E., 2012. *The dynamics of social practice: everyday life and how it changes.* Sage, Los Angeles.

Sikes, P.J., Piper, H., 2010. *Researching sex and lies in the classroom: allegations of sexual misconduct in schools*. Routledge, London.

Sinclair, J. (Ed.), 1994. *Collins COBUILD English language dictionary*, Collins, London.

Sinclair, J., 2005. Corpus and Text: Basic Principles, in: Wynne, M. (Ed.), *Developing Linguistic Corpora: A Guide to Good Practice.* Oxbow Books.

Solecki, W.D., Shelley, F.M., 1996. Pollution, political agendas, and policy windows: environmental policy on the eve of Silent Spring. *Environment and Planning C: Government and Policy* 14(4), 451-468.

Steffen, W. et al., 2011. The Anthropocene: From Global Change to Planetary Stewardship. *Ambio* 40 (7), 739–761.

Stern, N.H. (Ed.), 2007. *The economics of climate change: the Stern review.* Cambridge University Press, Cambridge.

Swyngedouw, E., 2010. Apocalypse Forever? Post-political Populism and the Spectre of Climate Change. *Theory Culture Society* 27(2), 213–232.

The Citizens' Assembly, 2018. *Third Report and Recommendations of the Citizens' Assembly: How the state can make Ireland a leader in tackling climate change.*

The Climate Coalition, 2018. *Show The Love*. The Climate Coalition. Available at: https://www.theclimatecoalition.org/show-the-love/ (accessed 9.17.18).

Thomas. C., 2010. Negotiating the contested terrain of narrative methods in illness contexts. *Sociology of Health & Illness* 32(4), 647–660.

Tolich, M., 2004. Internal Confidentiality: When Confidentiality Assurances Fail Relational Informants. *Qualitative Sociology* 27(1), 101–106.

Tyfield, D., Blok, A., 2016. Doing methodological cosmopolitanism in a mobile world. *Mobilities* 11(4), 629–641.

Tyfield, D., 2018. *Liberalism 2.0 and the rise of China: Global crisis, innovation and urban mobility.* Routledge, London.

Underdal, A., 2017. Climate Change and International Relations (After Kyoto). *Annual Review of Political Sciences* 20(1), 169–188.

Unruh, G.C., 2000. Understanding carbon lock-in. *Energy Policy* 28(12), 817–830.

Urbinati, N., Warren, M. E., 2008. The Concept of Representation in Contemporary Democratic Theory. *Annual Review of Political Science* 11(1), 387–412.

Urry, J., 2011. *Climate change and society*. Polity Press, Cambridge.

Urry, J., 2013. *Societies beyond oil: Oil dregs and social futures.* Zed Books, London.

Urry, J., 2014. *Offshoring*. Polity Press, Cambridge.

Urry, J., 2016. *What is the future?* Polity Press, Cambridge.

Weiss, G., Wodak, R., 2002. *Critical Discourse Analysis Theory and Interdisciplinarity*. Palgrave Macmillan.

Wertz, M.S., et. al., 2011. The composite first person narrative: Texture, structure, and meaning in writing phenomenological descriptions. *International Journal of Qualitative Studies on Health & Well-Being* 6(2), 1–10.

Whatmore, S.J., Landström, C., 2011. Flood apprentices: An exercise in making things public. *Economy and Society* 40(4), 582–610.

Whatmore, S.J., 2013. Earthly Powers and Affective Environments: An Ontological Politics of Flood Risk. *Theory Culture Society* 30(7), 33–50.

Whitmarsh, L., Corner, A., 2017. Tools for a new climate conversation: A mixed-methods study of language for public engagement across the political spectrum. *Global Environmental Change* 42, 122–135.

Wild, K., et al., 2013. Quantifying lexical usage: vocabulary pertaining to ecosystems and the environment. *Corpora* 8(1), 53–79.

Willis, R., 2017. How Members of Parliament Understand and Respond to Climate Change. *Sociological Review* 66(3), 475-491.

Willis, R., 2017. Taming the Climate? Corpus analysis of politicians' speech on climate change. *Environmental Politics* 26(2), 212-231.

Willis, R., 2018. Constructing a 'representative claim' for action on climate change: Evidence from interviews with politicians. *Political Studies* advance online publication, January.

Wilsdon, J., Willis, R., 2004. *See-through science: Why public engagement needs to move upstream*. Demos.

Wiseman, J., Edwards, T., Luckins, K., 2013. Post carbon pathways: A meta-analysis of 18 large-scale post carbon economy transition strategies. *Environmental Innovation and Societal Transitions* 8, 76–93.

Wodak, R., Fairclough, N., 1997. Critical Discourse Analysis. *In:* T. Deuk, ed., *Discourse as Social Interaction.* Sage, London.

Wright, C., et. al., 2012. 'Hippies on the third floor': Climate Change, Narrative Identity and the Micro-Politics of Corporate Environmentalism. *Organization Studies* 33(11): 1451–1475.

Wynne, B., 1996. May the Sheep Safely Graze? A Reflexive View of the Expert-Lay Knowledge Divide, in: Lash, S., et. al., *Risk, Environment and Modernity: Towards a New Ecology.* Sage, London.

Wynne, B., 2010. Strange Weather, Again Climate Science as Political Art. *Theory Culture Society* 27(2-3), 289–305.

Wynne, B., 2014. Further disorientation in the hall of mirrors. *Public Understanding of Science* 23(1), 60–70.

Wynne, M. (Ed.), 2005. *Developing Linguistic Corpora: A Guide to Good Practice*. Oxbow Books, Oxford.

Žižek, S., 2006. Against the Populist Temptation. *Critical Inquiry* 32(3), 551–574.

Annexes

Attached are copies of the following:

- Participant information sheet

- Consent form

- Interview schedule (Round 1)

- Interview schedule (Round 2)

- Three blogs written about the project, for Green Alliance's blog, *Inside Track*

Research Project Information Sheet

Project title: Parliamentary responses to climate change

This research project is a collaboration between Lancaster University and Green Alliance, funded by the UK Economic and Social Research Council (ESRC). The work is being undertaken by Rebecca Willis, with Nigel Clark and Vicky Singleton at Lancaster University, and Tamsin Cooper at Green Alliance.

Purpose of the project: In 2009, Green Alliance established its Climate Leadership Programme. Over the last six years, it has worked with more than 70 MPs to look at how they can incorporate consideration of climate change into their work as politicians. The research project seeks to evaluate this work, and ask how best to work with MPs and other decision-makers in the future.

The research process includes:
- Analysis of parliamentary debates on climate change;
- Interviews with stakeholders in government, business and environmental groups;
- Interviews with current and former Members of Parliament.

Findings will be produced for academic audiences (conferences, journal articles) and practitioner audiences, through Green Alliance. Findings will also be used to inform Green Alliance's strategy.

About the interview: The interview will be conducted by the researcher, Rebecca Willis, at a time and place convenient to you. The duration of the interview will be agreed with the interviewee and will depend upon the time available; as a guide, it will take 30-40 minutes. Interviewees will be asked for their views on the research question, and their own experience on the issue. Interviewees have full anonymity (see below for further details).

With agreement from the interviewee, the interview will be audio recorded, to allow transcription. Anonymised quotes and information from the interviews will be used to inform the project's findings, as above. Interviewees are free to refuse to answer any of the questions; to withdraw from the interview at any point before or during the interview; or to request the researcher to delete records of the interview. Upon request, any information held about an interviewee can be deleted; the data can also be withdrawn from the project for a period of up to two weeks after the interview.

Amonymity and confidentiality: Audio recording files, transcribed text files, and the audio recording device will be stored securely. Audio files will be deleted from the recording device immediately after the interview. They will be encrypted and transferred to a password-protected laptop. Interviews will be transcribed by the main researcher, Rebecca Willis. The interview transcript will be provided on request. If you wish, you may provide additional information, clarification or interpretations within 2 months from the time of the interview.

All contributions to the data will be anonymised. Anonymising means deleting or disguising all information that can render a person identifiable to an outsider. Your name and contact details will be held separately from any interview recording and notes and it will be impossible to associate the two.

Researcher: Rebecca Willis, r.willis@lancaster.ac.uk / 07764 586 221

Supervisors:
- Professor Nigel Clark, n.clark2@lancaster.ac.uk
- Dr Vicky Singleton, d.singleton@lancaster.ac.uk
- Tamsin Cooper, Green Alliance tcooper@green-alliance.org.uk

This project has been reviewed and approved by members of the University Research Ethics Committee.

Research Project Consent Form

Project title: Parliamentary responses to climate change

I confirm that I have read and understood the information sheet for the project and have had the opportunity to ask questions.

I understand that my participation is voluntary and that I am free to withdraw at any time during the interview, and withdraw the data from the project for a period of up to two weeks after the interview, without giving a reason and without detriment.

I agree to the use of anonymised information given by me, including quotes, in future published reports, articles or presentations for the purposes of the study.

I agree to take part in the study.

Name of Participant	
Signature	
Date	

Name of Researcher	Rebecca Willis
Signature	
Date	

Interview Schedule (Round 1)

Background

Interviews to be conducted by the researcher Rebecca Willis.

The interviews will be semi-structured and will follow a narrative approach (Merrill and West, 2009; Riessman, 2005) to set MPs' views on climate change within their professional and personal life story and career trajectory.

Given the time pressures on MPs, I will offer as much flexibility as possible over location and timing of the interviews but will aim for a minimum of 30-40 minutes.

Schedule

The interview will be flexible, with the aim being to develop a conversation between interviewer and interviewee, broadly following the structure below.

Introduction by interviewer:
Thanks for participation. Confirm procedure for consent – including anonymity. My research looks at how MPs understand and respond to climate change. But I want to start by talking to you a bit about how you see your role and work, then we'll go on to see how climate change fits into that.

Part 1: motivations for work
- Can you tell me about how and why you became a politician?
- Who do you see yourself as representing?
    - o Probe: constituency/local area/voters/country/party
- What are your aims as a politician? What would you most like to achieve, in professional terms?

Part 2: ways of working
- Can you tell me about a politician you have noticed, and how they achieve change?
- Can you tell me about an issue that you've worked on? How did you decide to work on it? [where possible, use background information on what issues that MP has worked on – as a prompt]
- Have you ever wanted to work on a particular issue but felt it wasn't possible because you didn't have support, or your party thought differently?

- What happens (or would happen) when you speak out on an issue that might not have the support of colleagues in your party or in Parliament more generally?

Part 3: relating this to climate change
- As you know I'm particularly interested in how this applies to climate change.

[for those who have worked on the issue]
- Why did you decide to focus on this issue?

[for those who haven't worked on the issue]
- Why have you not addressed this issue?

Interview schedule (Round Two)

Background

Interviews to be conducted by the researcher Rebecca Willis.

The interviews will be semi-structured and will follow a narrative approach (Merrill and West, 2009; Riessman, 2005) to set MPs' views on climate change within their professional and personal life story and career trajectory.

Given the time pressures on MPs, I will offer as much flexibility as possible over location and timing of the interviews but will aim for a minimum of 30-40 minutes.

Schedule

The interview will be flexible, with the aim being to develop a conversation between interviewer and interviewee, broadly following the structure below.

Introduction by interviewer:
Thanks for participation. Confirm procedure for consent – including anonymity. My research looks at how MPs understand and respond to climate change. This is the second round of interviews. First round: concentrated on how MPs navigate their working life, & their representative role.
I will tell you a bit about the findings from the first interviews – then we can focus discussion on the next steps.
Explanation - first round showed:
- MPs aware (to differing degrees) of the science. Concerned about climate change. But not something being required of them by their constituents.
- Dilemma: need to act, versus representative role of MP.
- Turn to simple / practical / local solutions. But then risks 'taming' climate change – making it small, manageable, incremental.
- What are the ways through this dilemma? How can we face up to the material significance of climate change in a way that engages / makes links?

Question structure:
- Does this analysis surprise you?
- How did you approach issue?
- Prompt: Nature of climate change (long-term, global, far-reaching implications; use IPCC evidence as base) Encourage reflection on this point.

- What does this mean for politics?
  - Including: Representation; traditions / assumptions of politics
- How can politicians be supported in taking action?

Annex

Blogs published on Green Alliance's website, *Inside Track*

Insidetrack

A blog on environmental policy and politics, hosted by Green Alliance

Are politicians 'taming' climate change with the language they use?

Posted on 17 January, 2017 | by Rebecca Willis

This post is by Green Alliance associate Rebecca Willis, it is based on research presented in a paper published by the journal Environmental Politics.

While climate deniers on both sides of the Atlantic attract media and public attention, the overwhelming majority of politicians in the UK support the scientific consensus on climate change. Just five out of 650 MPs voted against the Climate Change Act in 2008, and major parties in Westminster have all pledged their support for the Paris Agreement on Climate Change, signed in December 2015.

But that doesn't mean climate change is an easy subject for politicians. They have the tricky task of turning the scientific consensus about the need for action into a workable agenda that can win people's support. How do politicians go about this? What ways do they find to talk about the impacts of climate change, and the potential solutions?

Using a technique called corpus analysis, I have analysed hundreds of thousands of words spoken in the House of Commons in 2008, to expose the ways in which politicians try to tackle the climate issue.

Using science selectively

Corpus analysis uses software to spot patterns and styles of speech. It allows you to see what words are used most frequently, compared to normal speech; and the ways in which particular words or phrases are used. It uncovers patterns that you wouldn't see just from reading the text. It is particularly useful for politics, because the way that issues are talked about, or framed, influences action. Just think about the political framing of welfare issues, for example, and how distinctions between 'strivers' and 'skivers' are used to make the case for reducing benefits.

The analysis has thrown up some fascinating findings. It shows that politicians refer to climate science a great deal, but use a selective account of that science. They frame climate change as an economic and technical issue, something that isn't about people or families, or indeed the natural world. Above all, it shows that politicians work hard to explain and justify action on climate change but, in doing so, they 'tame' the climate, making it seem a more manageable and amenable issue than it actually is.

When talking about climate change, MPs use words like science, scientific and scientist very frequently, and words about cause and effect. This suggests that they are making statements about the science to build a case for action on climate (or, in the case of the sceptics, to oppose it). It is clear that they do not feel they can take the scientific consensus for granted. But there is very little discussion of abrupt or irreversible impacts (sometimes called tipping points or threshold events). They rarely talk about the potentially radical effects of climate change, even though these are discussed in the scientific literature, like the IPCC's summary for policy makers.

Leaving people and nature out of the picture
Politicians use economic and technical language to talk about the impacts of climate change, and potential solutions. Words like economy, costs, benefits, measures and efficiency all occur frequently. In fact, when I compared debates on the Climate Change Act with budget discussions in the same year, I was surprised to see that MPs are more likely to use the words costs and benefits when talking about climate change than when discussing the budget.

In contrast, people are rarely mentioned. Words associated with people and family were used six times more frequently in budget discussions than in climate discussions. In the climate debate, the most common 'people' word was actually household, which is more a unit of economic analysis than a description of a family. Neither do politicians talk about the environment much. The analysis shows that there is more talk of other species (animals and birds) in everyday conversation than in any political debate on climate.

Perhaps politicians do not discuss the human element of the climate problem or solution because they worry that a more emotional, people-based narrative would be discredited, despite the general tendency of politicians to appeal to personal narratives and human interest. But downplaying the human or social dimension of climate impacts and solutions reduces its relevance and communicability, and narrows the range of options for responding to climate change.

An understandable but flawed strategy
In short, rather than adjusting their world view to accommodate the far reaching implications of climate change, politicians instead attempt to 'tame' the subject, to fit into existing world views. This appears to be a well-meaning attempt to frame a difficult, complex issue into something more amenable to the political agenda. Presenting climate as an ordinary, manageable problem is more palatable than discussing the ways in which it might radically alter life as we know it.

The obvious caveat, though, is that wishing climate change to be more manageable will not make it so. Framing climate change in this way may make it more possible to talk about it, but risks failing to address the full implications. The evidence of this study suggests that it is very difficult for politicians to address climate change comprehensively within a formal parliamentary setting, however necessary this is.

New ways need to be found of opening up discussion, perhaps through using different types of debate, such as a 'national convention' on climate, or through dialogues between politicians, scientists and the public. This could allow politicians to debate fully the implications of climate change, and build support for a more comprehensive response.

The full paper is only accessible through university libraries, but if you would like to read it, contact Rebecca Willis, as there are a limited number of copies available to distribute for free. This research is part of a collaborative project between Lancaster University and Green Alliance, funded by the Economic and Social Research Council (ESRC).

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Insidetrack

A blog on environmental policy and politics, hosted by Green Alliance

What does climate change look like through the eyes of a politician?

Posted on 18 September, 2017 | by Rebecca Willis

I'm in a café in the House of Commons, talking to a newly-elected MP about climate change. He's under no illusions about likely impacts. He points out that where we're sitting, beside the River Thames, could be under water in decades to come. He calls climate change 'catastrophic', and looks for every opportunity he can to raise the issue. But his commitment has come at a price: speaking out on climate is, he tells me, a 'career-limiting move'.

It's easy to get frustrated with politicians. We know the consequences of not acting on climate change. We know what needs to be done. We just need to get on with it – which means that politicians need to play their part. No surprise, then, that climate activists are quick to express exasperation at the slow pace of change in government and parliament.

But what does it look like from the politician's point of view? How do our elected representatives think through their own stance on such a complex issue? I've just published some research offering some answers to these questions. It's based on interviews with fourteen current and former MPs, as part of a joint project between Lancaster University and Green Alliance. In the full paper (free access), you can read four politicians' stories, and a more detailed discussion of the findings that I've summarised below.

The politicians I spoke to understood the need to act on climate change. But it's long been known that the way in which people act on scientific evidence is complex. We don't just look at the evidence and calculate a rational response; instead our understanding is mediated by our social setting, outlook and experience. Politicians are no exception. Though each individual is different, there were three common themes that emerged from the interviews.

1. How it makes them look

First, politicians' responses depend on their sense of identity: how they see themselves, and how they want others to see them. Like any other institution, parliament has its own cultures and norms, which politicians are measured against. Many told me that climate change was seen as an 'outsider' issue, not something discussed as part of the mainstream of politics. One, who campaigns actively on climate, said he was seen as a 'freak'. Another was privately very concerned about the issue, but had made a deliberate choice not to shout about it.

When making the case for better transport services in his constituency, he argued in terms of congestion and convenience, deliberately not mentioning carbon reduction. "I think if I had mentioned carbon emissions", he told me, "there would have been a rolling of eyes and saying, "Oh here he goes again".

2. **How representative is it?**

Second, politicians are, of course, elected representatives. What they choose to act on depends, in part, on how they see their representative role. None of the interviewees felt much pressure from their electorate to act on climate change. As one said, "I've knocked on thousands of doors, and had thousands of conversations with voters, and I just don't have conversations on climate change." Nevertheless, some found ways to connect climate to issues of importance to those they represent, through making the link to job creation or better transport systems, for example. But making a case for action on climate is more difficult than, say, campaigning for a local hospital; it is less obviously 'representative'.
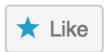
3. **It needs to be tangible**

Third, and linked, politicians have limited time and resources, and they need to show results. As one told me, "Politicians like to have campaigns they can win.... And you can't say 'I've campaigned to stop climate change. And now climate change is fixed, and I've delivered for you." As a result, many described how they tried to break down the complex issue of climate change into solutions and tangible, practical policies. The danger, though, is that, in doing this, they lose sight of the significance of the issue, or the need for more radical solutions. This chimes with previous research, which shows that politicians try to 'tame' climate change, to present it as a simpler, more manageable issue than it really is.

Together, these three factors go a long way toward explaining why politicians don't find climate change straightforward to work on or talk about. That's not to say that we simply should make excuses for them. But it does point to ways of working more effectively with politicians to build a case for climate action.

For example, it confirms the importance of bringing out the local dimension to climate change action, both to strengthen the link with the concerns of the electorate, and to offer tangible solutions. It demonstrates, as good campaigners and advocates know instinctively, that it is important to work with a broad range of interests, whether businesses, faith groups or young activists, so that climate change doesn't get pigeonholed as a niche issue. But it also means that we need to ask serious questions about whether our political institutions are able to chew over, let alone swallow, a problem as long term and complex as climate change, or whether we need different models of governance. That's the subject of a future blog from this research.

For more, see Rebecca Willis's research article at Sage Journals

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There's no political pressure to act on climate. So how are MPs responding?

Posted on 9 February, 2018 | by Rebecca Willis

Scientists are clear that urgent action is needed on climate. At the Paris Summit in 2015, world leaders agreed to limit rises in global temperatures. And yet climate change barely troubles domestic politics. Since then, I've interviewed over 20 members of the UK parliament, and one message has emerged with striking clarity: the electorate are not asking their representatives to act. In the words of one of my interviewees, "Voters don't ask about it. We go out and knock on doors, and we speak to people, and I don't know if I've ever been asked about climate change, ever."

This is a pretty fundamental dilemma for politicians. Most of them know what needs to be done. Yet they get their mandate from voters, who are not asking them to do anything at all. How can they square this circle?

Let me pause here and anticipate a response from you, as a reader of this blog. You may well want to argue that there is, in fact, pressure for action. You are right – up to a point. Politicians identify a particular group of voters who pile the pressure on. These voters, they tell me, are almost entirely affluent, educated city dwellers. They are vocal, but they are a small minority – one to which, I would guess, you and most readers of this blog probably belong. That leaves a lot of voters, a large majority, for whom climate change is a non-issue (there's more evidence about this in this useful paper). What's a politician to do, then, if they know that climate action is urgently needed, but there's precious little support?

Developing 'representative claims'

The good news is that very few politicians see their job as mere aggregators of voters' views. They are representatives, not delegates. They are influenced, but not controlled, by what their electorate tells them. Many are skilled in making a case for issues they think are important, even if they are not top of mind for voters. In my research, I found that they used four different ways of making a case for climate action.

Before describing these, I want to administer a small dose of academic insight, which really helped me to make sense of the complexities. The political theorist Michael Saward has written persuasively that representation shouldn't be seen as a static fact: that an MP represents a constituency just by virtue of being elected. Winning an election is necessary but not sufficient. Instead, representation should be seen as a process of claims-making, in which the politician makes claims which are then accepted, rejected or ignored by the electorate. In short, representation is a dialogue. When an MP campaigns against a hospital closure, they are, in effect, saying "I am campaigning for local health services and this makes me a worthy representative of this area". Saward calls this a 'representative claim'.

It is easy to see how politicians can make a case for supporting local hospitals. But how might this work for climate change? My interviews uncovered four different sorts of representative claim on climate.

A cosmopolitan claim

The first puts forward a global problem to which a global solution is proposed: a cosmopolitan claim. Politicians argue that it is in the interests of the global community to take action. As one interviewee told me, "a lot of the impacts of climate change are going to hit other places before they hit here. [My constituency] is not likely to be one of the first places to be hit particularly badly. So what? I just happen to be here."

This claim has the advantage of acknowledging the global dimensions of the problem. Yet it has limited appeal, as another explained, given that many people "fundamentally care about themselves, their environment, their friends, their local space... We have these sort of massive big things about what will happen in other parts of the world... and they're like, "yeah, ok, whatever"." In short, this claim is often ignored.

A local prevention claim

Another strategy is to tailor the claim explicitly to a local setting, saying that action is necessary to prevent local impacts like flooding. One MP representing a flood-prone area told me that he used floods as a way of talking about wider climate impacts. This claim has the advantage that it links a global issue directly to the local area, and allows a politician to talk in terms of the interests of local people. As with the cosmopolitan claim, though, it does not link directly to a case for local action to reduce greenhouse gas emissions.

A co-benefits claim

The most common strategy that interviewees reported was linking climate change to practical, achievable local actions, particularly economic measures, such as encouraging renewable energy generation, or improving transport infrastructure. This has the obvious advantage of relevance to the local area. Of course, many environmental advocates also use co-benefits arguments. A look back through this blog would throw up many examples. As one MP told me, "I'm happy to use an economic argument if that means that more people will come on side... I change the language to be much, much less extreme." The disadvantage of such a claim, though, is that it may reduce the opportunity to discuss the full implications of climate change, focusing instead on small steps at a local level.

A surrogate claim

A significant minority of MPs in my sample use an intriguing strategy, which I call the 'surrogate claim'. This approach involves promoting local benefits, like public transport, or reduced congestion, with no mention of carbon savings or climate change. In this case, although the politician is privately thinking of a particular strategy in terms of its climate benefits, they deliberately do not mention this, because they think it would backfire. One judged that, if he had mentioned carbon emissions in arguing for a sustainable transport scheme, "there would have been a rolling of eyes and saying, 'oh here he goes again'".

Overall, my research has demonstrated clearly that it is not straightforward for a politician to make a case for why, as an elected representative, he or she should support action on climate change. As a complex, mediated, global issue, the links with everyday lives of voters are not self-evident. As one interviewee memorably said, "you don't say someone came to my surgery with climate change coming out of their ears".

Lessons for climate advocacy

The research has some important messages for those of us who want to see greater political attention paid to climate change. Politicians don't have to make their claims alone. Demonstrating wide support, from other interest groups beyond the environment community, will help to develop claims that are more widely accepted. Second, whilst it is tempting to use a surrogate claim to get the right policies in place, such an approach is ultimately self-defeating, as it does not help to build the wider case for climate action. Last, it's both legitimate and necessary to think of all policies and actions in terms of whether they will build public support. Who will it appeal to? Does it help to make the wider case for action?

Apply this thinking, and different solutions emerge: like renewable energy owned by local organisations, rather than national scale generation; more resources and more responsibility given to support local areas to achieve carbon reductions; climate considerations embedded into regional and city-level innovation programmes; people-centred transport strategies that engage with the reasons for travel demand; and meaningful consultation on policies, engaging with people directly, and allowing people, politicians and others to deliberate together, and discuss shared solutions. Above all, it is only by making a bold, positive case for climate policies that we will build a political, as well as a scientific, case for action on climate.

This post is based on a research article published in the journal Political Studies. The research is part of a collaborative project between Lancaster University and Green Alliance, funded by the Economic and Social Research Council (ESRC). Download the full paper.

[Image: Tewkesbury floods 2008, Cheltenham Borough Council via Flickr Creative Commons]