Introduction

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[Prepublication manuscript of Chapter 1 of G. Garrard, A. Goodbody, G. Handley and S. Posthumus, *Climate Change Scepticism: A Transnational Ecocritical Analysis* , Bloomsbury Academic 2019, 1-39.]

When we started writing this book in the year 2016, it seemed the worst possible time to write about climate scepticism. From a scientific perspective, the argument was basically over: the Summary for Policymakers of the fifth assessment report (AR5) of the Intergovernmental Panel on Climate Change had stated that:

> Anthropogenic greenhouse gas emissions have increased since the pre-industrial era, driven largely by economic and population growth, and are now higher than ever. This has led to atmospheric concentrations of carbon dioxide, methane and nitrous oxide that are unprecedented in at least the last 800,000 years. Their effects, together with those of other anthropogenic drivers, have been detected throughout the climate system and are *extremely likely* [95-100% probability] to have been the dominant cause of the observed warming since the mid-20th century.
>
> (Synthesis Report Summary for Policymakers).

Moreover, an unprecedented array of international scientific organizations had offered the IPCC their support. Dozens of national and international academies of science, including the British Royal Society and the American Academy for the Advancement of Science, published statements confirming that the IPCC process is sound, and its conclusions commensurately robust. The only organizations maintaining non-committal positions represented scientists who mainly work in fossil fuel industries: the American Association of Petroleum Geologists and the American Institute of Professional Geologists (‘Scientific Opinion on Climate Change’). While acknowledged areas of scientific uncertainty remain, the IPCC position is, as they say, ‘settled science’.

In terms of global politics, too, the game seemed to be up. The much-hyped 2009 Copenhagen climate conference (COP15 in United Nations parlance) turned out not to be, as one cringe-

worthy marketing phrase had it, 'Hopenhagen'; it turned into an unseemly squabble between China and the United States instead. However, the UN process got decisively back on track in Paris six years later, when COP21 resulted in a global agreement to reduce greenhouse gas emissions so as to prevent more than 2°C rise in global mean surface temperature over pre-industrial averages. Once bilateral agreement was reached between the USA and China, it appeared that the international political consensus at last matched the scientific one.

Warm words and global agreements such as the Kyoto Protocol have had minimal impact in the past, but now there seems to be real change in the air. After a decade when the annual rate of increase of global CO_2 emissions was around 4%, the rate of increase fell to 1% in 2012 and 2013, and then just 0.5% globally in 2014 (Olivier). The growth of renewable energy worldwide is astonishing, as David Boyd reports in *The Optimistic Environmentalist*:

> In 2000, the [International Energy Agency] predicted that global wind power would reach a total of 30 gigawatts by 2010. … Oops! Their forecast was exceeded in 2003, seven years early, and more than 30 gigawatts of wind power has been installed *every year* since 2009.
>
> (Boyd 27)

While conservatives and climate sceptics object to wind farms blighting the uplands of the British Isles, the global energy revolution is getting under way. The Chinese spent more on installing renewable energy than fossil-fuelled power stations in 2013, and in 2014 their total demand for coal declined for the first time. Of course, a couple of good years do not a trend make. Nevertheless, when we embarked on writing this book in 2016, there were sound scientific, technical, cultural and economic reasons for thinking that the long, difficult transition from fossil fuels had begun.

What a difference a year makes. The assumption that climate sceptics have been left on the 'wrong side of history', as the complacent phrase has it, has proven premature. There were many reasons why 51.9% of voters in the British referendum wanted to leave the European Union, but the incessant agitation of the right-wing press – as sceptical about climate science as it was antagonistic to the European project – played a significant role. Conservative and neo-

fascist populism has hit a high tide mark across Europe and the United States, as embodied at the time of writing in the figure of President Donald Trump. All the other Republican contenders for his job expressed some degree of scepticism about climate science, both reflecting and further entrenching the partisan divide on the subject in the United States. Trump's electoral advantage derived, in large part, from his supporters' intense sense of grievance, who were told that 'Trump digs coal' and that the mining industry might yet be saved from destruction by vindictive environmentalists. His lie-littered speech on June 1st 2017 (Schipani), announcing the promised withdrawal of the USA from the Paris (COP21) Agreement, included the observation: 'I was elected to represent the citizens of Pittsburgh, not Paris.' One year into the Trump Presidency (we can scarcely refrain from shivering to write those words, even now), there may be only 1000 more Americans employed in coal mines than in 2016 (Thompson), but Obama's Clean Power Plan has been slated for repeal by Trump's Environmental Protection Agency administrator Scott Pruitt (Carter). The political battle, in the USA at least, is far from over.

The anxiety, bafflement, and deep antipathy the present authors share towards the resurgence of right wing populism exemplifies the problem of political polarization but does nothing to solve it. While deriding Trump and the 'Brexiteers', and by extension their ostensibly gullible supporters, is emotionally satisfying for liberal environmentalists, it is also symptomatic of a widening gulf of comprehension, trust and empathy that is, we argue, profoundly dangerous. So we set out deliberately to *understand* climate scepticism, not to vilify or even overcome it. Without surrendering our difference of opinion, we want to try to see the world from the perspective of climate sceptics by analysing a range of texts from four different countries. Righteous environmentalists that we are in real life, we are inclined to ask: 'who do they think are, challenging the overwhelming scientific consensus on climate change?'. In this book, though, we accept the task of asking, in all seriousness, 'who do *they* think they are?'

Why Study Climate Scepticism Ecocritically?

You get interesting responses when people hear you are researching climate scepticism. Fellow environmentalist academics tend to think it is a worthwhile topic, but only if you are planning to develop still more persuasive means of challenging 'denialist' positions. A mixed group of scientists and humanists responded to a presentation of this research by suggesting that, while

it was fine to discuss it in a scholarly context, we ought not to make it public in case it further undermined the scientific argument. A Cultural Studies professor who criticized our approach at a public discussion forum implied that we were allowing ourselves to be duped by the conspiracy of fossil fuel companies outlined in such books as Naomi Oreskes and Erick M. Conway's *Merchants of Doubt*. People outside academia respond differently: one of the present authors discussed the project on a local radio station, and immediately started getting anonymous emails extolling questionable theories about global warming. One memorable correspondent insisted he knew the warming trend was natural because the sun was more yellow when he was a child, thereby proving that solar irradiance had increased. A symposium relating to this book project was even attacked on a leading sceptical website, which might be a badge of honour.[i] The defensiveness of liberal academics reflect a concern that climate scepticism symbolizes a wider challenge to expert knowledge, including, potentially, their own. The cranky aggressiveness of initial communications from sceptics, both within and without academia, shows they do not expect a sympathetic hearing. Both reactions exemplify the growing polarization of the climate debate, the subject of the next section of this chapter.

Our first response, to both sides, is that we are not in a position to contest or defend the IPCC position. We are scholars of literature and culture, and so although we consider that, to the best of our knowledge, the IPCC's methods and conclusions are sound, we also acknowledge that we are simply unqualified to render a scientifically informed judgment. Given this respect for the IPCC consensus, we describe more catastrophic predictions as 'alarmist,' although we acknowledge arguments that, far from exaggerating the risks, the IPCC reports are too conservative. We have sought to understand the science of climate change, not least so we can grasp the technical objections to it, but we cannot reasonably participate in the debate as if we were climatologists or atmospheric chemists. Our situation is akin to that of scholars who read the Bible as literature: they know that, to Richard Dawkins or the Pope, the literal truth of the Bible matters very much indeed, but they adopt a position of *methodological agnosticism* (regardless of their personal beliefs) because their objective is comprehension, not endorsement or rejection. We propose to read climate scepticism 'as literature' for three good reasons: one is that it's what we are qualified to do and we wish to make a virtue of adversity. Another is that a few sceptical texts are unequivocally literary, and the others have at least some interest as texts, if not a lot of merit. The third, most ambitious, reason is that

approaching climate sceptics through their texts, rather than examining them as a population or a conspiratorial foe, may help to undermine the stereotypical view environmentalists tend to hold of those with whom they disagree. And that, we claim, has inherent moral and cognitive value.

These provisos ought not to suggest that our approach to climate sceptics' texts will be uncritical. Rather, they clarify what kind of criticism matches our expertise to the texts we've chosen to read. Our approach is, in part, informed by the idea of 'frames', which we draw from the study of environmental communication. According to George Lakoff, co-author of the influential *Metaphors We Live By*, frame analysis responds to a shift in the scientific understanding of thinking:

> Most of us were brought up with a commonplace view of how we think that derives from the Enlightenment. Over the past 30 years, the cognitive and brain sciences have shown that this view is false. The old view claimed that reason is conscious, unemotional, logical, abstract, universal, and imagined concepts and language as able to fit the world directly. All of that is false. Real reason is: mostly unconscious (98%); requires emotion; uses the ''logic'' of frames, metaphors, and narratives; is physical (in brain circuitry); and varies considerably, as frames vary. And since the brain is set up to run a body, ideas and language can't directly fit the world but rather must go through the body.
>
> (Lakoff 72)

Humans, according to Lakoff, understand words and sentences in relation to larger-scale subconscious frames of reference, or schemata, without which nothing could make sense. Climate sceptics and their opponents – let's call them 'warmists' for now, as the sceptics do – interpret statements relating to climate in relation to enculturated frames. The problem is that, as Lakoff shows, their respective frames are radically different. He lists six framing differences between the 'conservative' and the 'progressive', including the former's belief in human superiority (anthropocentrism) and the capacity of free markets to yield maximized human benefit (market fundamentalism). Less obvious is the conservative's preference for direct causation over systemic explanations, and his acceptance of Cost-Benefit Analysis and the 'Equivalent Value Metaphor', which together view environmental goods as interchangeable,

or at least replaceable. Harms done to nature can be calculated in advance, weighed against other benefits, and if necessary offset by restoration or preservation elsewhere. Lastly, Lakoff identifies the pejorative stereotype of the 'Liberal Elite' that is prevalent among conservatives:

> … the tax-and-spend, sushi-eating, latte-drinking, Birkenstock-wearing, do-gooder, know-it-all liberals! This [stereotype] tends to make conservative populists doubt and reject the science behind reports that establish the existence of and impact of global warming.

Lakoff's sympathetic characterization of the progressive moral system, though, does not acknowledge the stereotypes that also validate *the progressive's rejection* of the conservative's frames. If you need evidence, ask a progressive American to describe a typical Donald Trump supporter. It wouldn't be complimentary, would it? Further examples of unwitting liberal myopia will be introduced below.

Matthew Nesbit, an environmental communications scholar, agrees with Lakoff that conservatives have dominated the framing of climate change in the USA, and that reframing the debate will be crucial to building public support for determined political action. His definition of a frame is more narrative-oriented than Lakoff's:

> Frames are interpretive storylines that set a specific train of thought in motion, communicating why an issue might be a problem, who or what might be responsible for it, and what should be done about it.
>
> (Nisbet 15)

Nevertheless, the implications in terms of analysis are similar: to identify latent 'storylines' behind extant texts or other artefacts and evaluate their effectiveness. So, for example, Nesbit criticizes environmentalists' efforts to challenge conservatives' preferred framing with climate 'alarmism':

> … former U.S. Vice President Al Gore, many environmentalists, and even some scientists have attempted to counter the [conservatives'] *scientific uncertainty* and

> *economic consequences* frames by emphasizing a *Pandora's box* of looming "climate crisis." To instantly translate their preferred interpretation, these advocates have relied on depictions of specific climate impacts, including hurricane devastation, polar bears perched precariously on shrinking ice floes, scorched, drought-stricken earth, blazing wild fires, or famous cities or landmarks under water due to future sea-level rise.
>
> (19)

Nesbit warns that such framing may paradoxically reinforce the 'scientific uncertainty' storyline, because 'the error bars of uncertainty for each of the climate impacts are much wider than the general link between human activities and global warming'. Indeed, the limitations of climate models' projections are a constant – and not unjustified – refrain in the literature we survey. Moreover, sceptics' ridicule of the polar bear icon as a megafauna stand-in for all non-human life and as the presumptive preferred species, over humans, to preserve, supports Nesbit's contention that the 'Pandora's box' framing may only exacerbate polarization. Instead, he identifies 'economic opportunity' and 'morality and ethics' framing as potentially more likely to circumvent polarization.

In the chapters that follow, each one focused on a national literature,[ii] the co-authors adopt their own voice and critical approach; our collaboration implies dialogue, not homogeneity. Where appropriate we draw on the idea of frames to help link our analysis to the wider currents of research into the cultures of climate change. Our own analyses are framed by our individual concerns and interests: Handley, for example, critiques environmentalists' lack of attention to American sceptics' ideo-theological framing of the climate issue, whereas Garrard situates British scepticism in relation to party-politicization of the environment in the 1980s and 90s. At the same time, though, all our chapters reflect our concern that previous readings of scepticism have tended to understate the diversity concealed by binary categorisation. For example, Martin Lack's study of British climate scepticism, *The Denial of Science,* classifies a wide range of texts and their authors according to a typology that includes 'Contrarianism', 'Cornucopianism', 'Economic Rationalism' and 'Prometheanism'. Although these remain useful categories, they have the unintended effect of eroding the distinctiveness of individual texts. To a literary scholar, such differences make a difference, and so we extend typological or framing analysis with close reading, with the specific objective of eliciting the singularity of

each text. We don't deny the accuracy or the value of population-level analyses; we merely maintain that traditional literary criticism has a distinct function and significance in relation to climate scepticism. We present both critical and admiring assessments of sceptical texts, but these are, as far as possible, literary judgments rather than political or scientific ones. By meeting sceptics on the terms they have proposed – by choosing to write a novel, or a play, or a popular scientific text – we seek to avoid reinforcing confrontational stereotypes. Instead, we take them more seriously *as writers* than anyone might expect, the authors themselves included.

In doing so we run the risk of implying that sceptical perspectives on climate change are equivalent to those of scientific experts. While our position on the latter point is discussed in chapter 6, our general approach adopts the second and third of David Bloor's tenets for the 'Strong Programme' in the sociology of scientific knowledge ('SSK'):

> 2. It would be impartial with respect to truth and falsity, rationality or irrationality, success or failure. Both sides of these dichotomies will require explanation.
> 3. It would be symmetrical in its style of explanation. The same types of cause would explain, say, true or false beliefs.
>
> (Bloor 5)

Bloor's SSK seeks 'causal' sociological explanations for both scientific knowledge and its supposed opposites – ignorance, superstition, scepticism and so on – whereas our approach is interpretive. When we apply techniques of rhetorical critique 'symmetrically' to warmism and scepticism, we find that both positions represent themselves as 'David' to the opposition's 'Goliath', for example. At the same time, we 'impartially' bracket out scientific 'styles of explanation' of beliefs about climate change, even though we consider one set – embodied in the IPCC reports – true and the other false.

It seems unlikely that many people will notice our fragile neutrality; a popular academic text might sell a few thousand copies, and be read, at least in part, a few thousand times more in university libraries. Defensiveness aside, though, we have two positive reasons for reading climate scepticism agnostically: one, addressed below, is that it is inherently valuable to

challenge stereotypes, even of socially dominant groups, and the other is simply that there are no existing analyses of sceptical texts in the field of environmentally-orientated literary and cultural criticism, also known as 'ecocriticism'. In fact, to our knowledge, ecocriticism has yielded no detailed studies of anti-environmentalist culture at all. Until now, approximately half of the political spectrum has been completely ignored – a pointed irony for a school of criticism that has always called itself 'political'. And yet identifying anti-environmentalist culture only to expose its obvious limitations from a liberal or radical left perspective would be facile – like shooting fish in a barrel whilst preaching to the choir. Better to approach scepticism with something like Frederick Buell's grudging admiration for anti-environmentalist rhetoric:

> Sometimes memorable because of its sheer panache, it is always carefully scripted, intentionally partisan rhetoric. It is also virtuosically polyphonic. Though its linguistic range is not perhaps as large as St. Paul's – it doesn't speak simultaneously in the tongues of men and angels – it does encompass a considerable range of voices nonetheless. It reaches across the gulf between the media-savvy, expertise-rich talking head on a highbrow television show to the hectoring vulgarity of Rush Limbaugh-style talk-back radio-show hosts.
>
> (Buell 10)

Our research broadly confirms Buell's assessment. We note, though, that having praised it for being 'virtuosically polyphonic', he goes on, like Lack, to characterize it in terms of five typical 'rhetorical shapes'. Indeed, scholars frequently acknowledge the diversity of climate scepticism whilst offering analyses that tend to minimize or eliminate it. Even so, Buell pays reluctant tribute to the rhetorical effectiveness of anti-environmentalism, and we believe that, like him, we have to open ourselves to the power of sceptical texts if we are to account for their influence.

How did ecocritics fail to address the enormous influence of anti-environmentalist rhetorics in our cultures? It was not that they went unnoticed, of course; the guile and sway of the opposition are a constant in ecocritics' conversations and on social media. The problem is that anti-environmentalism manifests overwhelmingly in forms ecocritics do not consider 'literary': in Heartland Institute press releases; in virulent, anonymous comments left on newspaper

websites; obliquely in advertisements for meat products or petroleum companies. Despite cultural materialism, digital humanities, and other movements that tempted literary scholars to abandon Literature, the discipline remains indebted to what Michel Foucault calls 'the author-function', that historically-labile ascription of a particular type of 'authority' to texts that come with a person's name attached (Foucault).

The choice of texts in this book reflects this assumption: it overwhelmingly considers substantial, coherent, authored texts, either printed or on film, not blogs or media briefings, important though they are. The book therefore embodies an overt, reflexive selection bias: we will be reading texts in a way that emphasizes their uniqueness, and to facilitate this, we have chosen texts to read that are likely to be distinctive. Blog posts and press releases, often anonymous and seldom artfully constructed, can usefully be 'read' using text-mining technologies in order to understand sceptical discourse at a broad population level (Boussalis and Coan). Such analysis provides persuasive evidence of variations in topic prevalence over time, but it relies on *prior* identification of 'conservative CTTs' as, in effect, authors, and disregards the kind of generic and stylistic features that only close reading can uncover. Furthermore, the absence of coherent subjectivity – let alone emotional complexity or ambivalence – from such material reduces its usefulness to readers interested, as we are, in understanding the perspectives of individual climate sceptics.

At the same time, some of the texts we have chosen fall between genre lines, challenging the above characterization of 'substantial, coherent, authored texts.' For example, Claude Allègre's *L'Imposture climatique* (The Climate Imposture) is largely a collection of interview transcripts with comics and literary quotes added here and there. Co-written with journalist Dominique Montvalon, the text recreates the oral quality of the conversations between the two men, with nonverbal communication such as laughter indicated in parentheses. The usual careful attention to narrative strategies no longer serves the literary critic; instead, elements of rhetoric and argumentation become the main focus. Rather than examining the complexity of the individual fictional text, it is the varying tones and timbers of climate scepticism as a discourse in the process of constructing itself that become the object of literary analysis.

Literary critics typically remain wedded, as much personally as intellectually, to notions of aesthetics and the quality of writing. Though few take up the challenge of defending their evaluations systematically, they generally want to read, teach and analyse good books, not terrible ones. We shall have to decide, in the course of the detailed analyses presented in this book, whether sceptical texts justify respectful treatment (spoiler alert: sometimes they do), but it is worth saying that good books are, to some degree, made by the quality of attention we bring to them. At this stage, we can reveal that British, German and French sceptical texts were better than we expected, and they became, on the whole, more interesting the more we thought and talked about them. The Americans… well, we shall see.

Is Western Politics Increasingly Polarized?

During the 2015 Canadian general election campaign, the photogenic Liberal leader Justin Trudeau insisted that 'Conservatives are not our enemies. They are our neighbours. They are our cousins and uncles and parents. They are our friends' (Payton). The contrast with the intensely partisan politics to the south and, increasingly, across the Atlantic was pointed: Hillary Clinton was unafraid to characterize her Republican opponents as 'enemies', though the prospect of luring away anti-Trump conservatives elicited more emollient language during the election campaign. Trudeau's comment could be interpreted as a mere political platitude, or an opportunistic bid to attract floating voters, but it also corresponds to the promise of 'sunny ways' that helped win his party the election. Canada did not suffer a financial crisis and rarely has to decide what to do about migrants at its borders. If Canada manifests less political polarization, though, it would seem to be the exception in North America and Europe.

Across the EU, national parliaments and the European Parliament have seen swings away from centrist parties towards the left and right: Syriza, a Coalition of the Radical Left, holds power in Greece, and the British Labour Party, led by the socialist Jeremy Corbyn, performed surprisingly well in snap elections in the UK in 2017. In France, the growing popularity of Marine Le Pen, leader of the far-right National Front, prompted the emergence of new, pro-EU centrist party, 'La République en Marche!', that kept her from the presidency in the 2017 elections. The election of Emmanual Macron notwithstanding, research shows the steep decline in support for centrist parties across Europe since the 2008-2009 financial crisis (Groskopf). The most striking evidence is a graph of the changing standard deviation, which 'evaluates the

distribution, or spread, of the ideological scores [of political parties]. A larger standard deviation indicates greater polarization. By this measure, the EU is by far the most polarized it has ever been.' Commentators frequently have recourse to Yeats's words in 'The Second Coming': 'Things fall apart; the centre cannot hold; … / The best lack all conviction, while the worst / Are full of passionate intensity.' Divisive issues such as migration and terrorism are driving the polarization in European politics. By contrast, it is not yet clear to what extent public opinion on climate change in Europe affects, or is affected by, this shift.

On the face of it, the United States too is becoming more polarized, though the two-party plurality voting system makes it harder to track than in European countries with multiple parties elected by proportional representation. Until the 2016 election redrew the map, the partisan divide between the 'red' (Republican) and 'blue' (Democratic) Americas was a journalistic staple, for which the electoral map was a visual icon: blue states around the Great Lakes and down both coastlines, and red states throughout the 'flyover territory' of the Midwest and across the south. After the 2000 Gore-Bush election, Terry Mattingly wrote in *The Knoxville News-Sentinel* that:

> The Year of Our Lord 2000 was the year of the map. … This election was Hollywood vs. Nashville, 'Sex and the City' vs. 'Touched by an Angel', National Public Radio vs. talk radio, 'Doonesbury' vs. 'B.C.', 'Hotel California' vs. 'Okie from Muskogee.' It was *The New York Times* vs. National Review Online, Dan Rather vs. Rush Limbaugh, Rosie O'Donnell vs. Dr. Laura, Barbra Streisand vs. Dr. James Dobson, the Supreme Court vs. – well, the Supreme Court.
>
> (cited in Fiorina, Abrams and Pope 4-5)

This simplistic distinction prevails throughout the American media, as Morris Fiorina and Samuel J. Abrams observe:

> We are told that red-state residents are more likely to be Evangelicals, gun owners, country music devotees, beer drinkers, and NASCAR fans, whereas blue-state residents are more likely to be agnostics or atheists, Volvo drivers, supporters of the fine arts,

> chardonnay sippers, and people who sail. Scores of such contrasts have been noted in one media outlet or another.
>
> (Fiorina and Abrams 567)

And yet, they warn, surveys repeated over decadal timespans do not show that the distribution of public opinion in the American population has decisively shifted: 'In the aggregate, there is virtually no change in the distribution of American ideological identification' (570) from 1972 to 2004. On most issues, a normal distribution around a centrist position, rather than a bimodal distribution clustered at the extremes, is typical. On a few issues, such as gay marriage, opinion does appear to be polarized, but this could be a transient artefact of a longer-term trend from one consensus (hostile to homosexuality) to another (accepting of homosexuality). Overall, they conclude, 'we see a largely centrist public drifting slightly rightward on some issues, slightly leftward on others, but with only very small declines (of 2–5 percentage points) in the number of moderates' (574). If the US electorate is only slightly more polarized than in the past, why does 'The country now seems polarized and embattled to the point of dysfunction' (Haidt 319)?

Fiorina and Abrams agree with Haidt that the two main political parties have become more polarized: there are fewer moderate Republicans, and fewer right-leaning 'Blue Dog' Democrats from the South. Moreover, the party's platforms have separated out and consolidated into opposing manifestoes with little common ground. American voters may not be more divided than before, but they are invited to choose between parties whose hard-fought partisan differences are highlighted daily by media organizations that are themselves perceived as partisan. Elite polarization manifests in vituperative political debates, as well as legislative gridlock and the recurrent threat of government shutdown and federal debt default.

Once the differences between the parties emerge with greater clarity, voters are then likely to align themselves more decisively – even if the overall distribution of opinion remains unchanged. Such 'party sorting' contributes to perceived polarization, in spite of the lack of evidence of a collapsing centre or significant growth of more radical viewpoints.[iii] As divisive a figure as President Donald Trump is, his election-winning appeal clearly spanned the racism of the extreme right with the hostility to free trade and globalization more often associated with

the left. His political hybridity (or incoherent opportunism) may mean that his presidency will counteract, not reinforce, party and ideological sorting.

One way to reconcile the fact that, in America, public opinion has scarcely budged since the 1970s on most issues while public discourse seems far more polarized, is to examine voters' feelings towards one another, rather than their opinions. Shanto Iyengar and Sean D. Westwood undertook research to establish Americans' hostility to political opponents and propensity to discriminate against them, which they call 'affective and behavioural polarization'. Using cleverly-designed implicit association tests to minimize our natural bias towards expressing socially acceptable views, they discovered that 'hostile feelings for the opposing party are ingrained and automatic in voters' minds' (Iyengar and Westwood 691). More remarkably, benchmarking their findings against racial bias, which many Americans consider the most profound cleavage in their society, they found that 'the level of partisan animus in the American public exceeds racial hostility'. Unlike racism, which is prevalent in spite of social norms opposing it, open hostility has been wholly normalized in political discourse. Not only were Iyengar and Westwood's subjects emotionally antagonistic towards political opponents, they were willing to discriminate against them in a simulated job search and a money-based trust game called 'Dictator'. By contrast, participants in the research betrayed relatively little subconscious racial hostility and avoided overt racial bias in their decisions.

Other developments may be exacerbating the polarization described by Westwood and Iyengar. Advanced demographic mapping has enabled parties to draw electoral boundaries that concentrate the opposition's voters and multiply the seats they might capture – a process called 'gerrymandering'. Gerrymandered seats, such as the absurdly-shaped districts in North Carolina (Republican-controlled) and Maryland (Democrat-controlled) (Ingraham), are thought to encourage representatives to express polarized views at odds with their broadly centrist electorate. However, analysis by John Sides shows that safer seats are only modestly correlated with right-wing votes for Republicans, and that Democrats in safe seats are no more or less liberal than those representing marginal districts (Sides). More likely, he says is that local party organizations have been captured by uncompromising activists, leading to primary selection processes biased towards more extreme candidates.

At the same time, internet news sites and social media have undermined the former dominance of the TV news organizations, with their commitment to balance and fact-based reporting. Although newspapers and, to a lesser degree, TV networks have always been seen as biased, openly partisan coverage – Fox News and Breitbart on the right and the Huffington Post on the left – is a twenty-first century development. Increasingly, it is possible to exist in an informational 'echo chamber', encountering only versions of already strongly-held opinions. Furthermore, vital modern sources of information, such as Google searches and Facebook news feeds, employ personalization algorithms that, in effect, reinforce prejudices by preferentially showing users things they will probably 'Like'. Eli Pariser terms the effect of all these algorithms the 'filter bubble':

> ... your filter bubble is your own personal, unique universe of information that you live in online. And what's in your filter bubble depends on who you are, and it depends on what you do. But the thing is that you don't decide what gets in. And more importantly, you don't actually see what gets edited out.
>
> (Pariser)

So although the US electorate as a whole is not (yet) dramatically more polarized than in the 1970s, the relationship between the parties, voters' feelings about partisan opponents, and public political discourse have entered an exceptionally confrontational phase. Trump's election has had ambiguous effects: his own interventions continue to coarsen and degrade political discourse, but there is also increased attention to filter bubbles and the risks of polarization (Bruni). The *New York Times* publishes links to articles from both right and left-wing publications on its news site, to help readers gain a broader perspective (Dubenko). The right-leaning *Wall Street Journal* presented 'Blue Feed Red Feed': imaginary conservative and liberal Facebook feeds side-by-side (Keegon). *Strangers in Their Own Land*, a remarkable book by Berkeley sociologist Arlie Russell Hochschild, is the result of five years of research in Louisiana to understand why the very Americans who suffer the most from pollution also vote for politicians who oppose environmental regulation. Hochschild writes:

> Everyone I talked to wanted a clean environment. But in Louisiana, the Great Paradox was staring me in the face – great pollution and great resistance to regulating polluters. If I could truly enter the minds and hearts of people on the far right on the issue of the water they drink, the animals they hunt, the lakes they swim in, the streams they fish in, the air they breathe, I could get to know them up close.
>
> (Hochschild 21)

Hochschild's ethnographic methodology is very different from that of the present authors, but we share her objective: to challenge political polarization by scaling the 'empathy wall' between environmentalists and sceptics.

Polarization may be startlingly conspicuous in the USA, but it extends well beyond it. Westwood and Iyengar went on to collaborate with a group of researchers in the UK, Belgium and the Basque region of Spain so that they could test their affective polarization thesis cross-nationally. They expected to find that the deep social cleavages between Flemish and Walloon Belgians and Basques and Spaniards would outweigh party loyalties, whereas British and American participants would be more partisan. In Belgium and the Basque country, social cleavage is manifested in a plethora of political parties covering the full left-right spectrum *and* the ethnic divide, so it's possible to parse out allegiances more precisely than in two- or three-party states. What they discovered surprised them:

> Contrary to expectations, we find that in divided [Belgium, Basque country] and integrated [UK, USA] societies alike, animus based on party affiliation easily exceeds animus based on social group ties. Partisanship exerts a stronger psychological bond than affiliation with racial, religious, linguistic or ethnic groups, even when those cleavages are highly conflictual and the principal basis for the parties' ideological positions and electoral appeals.
>
> (Westwood et al.)

While the multiparty states exhibited less affective polarization overall than the UK and USA, the partisan effect was dominant in all four of them – even in a part of Europe scarred by

violence between Basque separatists and the Spanish state that lasted over half a century. The authors conclude that:

> Defined in terms of affect, voters' sense of partisanship represents the dominant divide in modern democracies and the strongest basis for group polarization.

This is an extraordinary finding. It implies that the holy trinity of literary and cultural studies, race, gender and class, no longer captures the most important sources of hostility, mistrust and discrimination in western democracies. The corollary must be that counteracting political polarization is the most urgent task for the liberal academy, albeit that – outside political science – it is hardly yet recognized as such.[iv]

Finally, it has become clear that cultural identity, not scientific knowledge, determines the stated beliefs of Americans, at least, when it comes to climate change. Challenging the meaning of results of opinion polls carried out on Americans, Dan Kahan observes that 'whether people "believe in" climate change, like whether they "believe in" evolution, *expresses who they are.*' (Kahan 11) Using a survey that deliberately seeks to measure knowledge of climate science *as opposed to* identity, Kahan found that the ostensibly large differences between Democrats and Republicans disappeared. He concludes that:

> … unless one engages citizens in a manner that avoids identity threat, no amount of knowledge about climate science will forestall divisive cultural conflict on global warming. Not only did the item-response profile for "belief in" human-caused climate change fail to display the characteristics of a valid indicator of climate-science comprehension. Those respondents [with the] *highest* level of such comprehension were also the *most* polarized in their "beliefs in" human-caused global warming.
>
> (26)

In other words, climate sceptics cannot be dismissed as dummies who reject science, and they are unlikely to be persuaded by more, and more brilliantly communicated, science. Indeed, warmists surveyed by Kahan were just as likely to have scientifically *unsupported* views about climatic risks, such as that global warming would increase skin cancer or reduce photosynthesis

(20). If Americans' lack of relationship, across the spectrum of opinion, between climate science comprehension and 'belief in human-caused global warming' can be generalised elsewhere, the IPCC/COP approach – overcoming resistance with scientific knowledge – is doomed. In this book, we explore an alternative pathway.

Why Not Stereotype Climate Sceptics?

When ecocritics think of themselves as political, they rarely mean *party* political, even though that is the predominant mode of political activity, progressive or reactionary, in Western society. The kind of poli.sci. analysis offered here will therefore seem incongruous in a book of literary criticism. To conservatives, though, the party affiliations of ecocriticism are pretty obvious: implicit positions range from 'soft left' ecological modernizers to more radical eco-socialism, eco-feminism and environmental justice, with few, if any, scholars explicitly to the right of centre. In that regard, ecocritics are at least as politically homogenous as climate sceptics, possibly more so. Moreover, Westwood and Iyengar's findings of affective polarization, in the USA and beyond, imply it is increasingly dangerous to ignore either the divide itself or the people and perspectives on the other side of it. The harm to institutional processes and to the quality of political discourse are obvious, and worrying enough, but growing alienation between ideological factions also has a cognitive cost in the form of intellectually and morally limiting stereotypes.

The social psychology literature on stereotyping is too vast to survey here. However, there are two consistent findings that are relevant here: the perception of out-group homogeneity, and the countervailing value of perspective-taking. Stereotypes are, by definition, homogenous. Political scientists have found, over decades of research, that even trivial social differences can become the basis for ingroup/outgroup distinctions, and that outgroup members tend to be lumped together in consequence:

> Members of an outgroup are seen as more homogeneous or similar to one another than are members of an ingroup …, even when the basis for categorization is minimal in nature … . Evaluations of outgroup members are more polarized than those for ingroup members.
>
> (Park and Judd 110)

Moreover, one group usually thinks that it behaves well because they're good people ('dispositional attribution'), and behave badly only because of adverse circumstances ('situational attribution'), whereas the opposite is true of the other group. In psychology labs, social divisions based on insignificant or fictitious differences, such as wearing different shirts, can be created with distressing ease – so-called 'minimal group' experiments – although they don't always lead to homogenizing outgroups. Prejudices about 'natural' outgroups, like political opponents, can be pernicious and obdurate by contrast.

Stereotypes have been shown to have a range of damaging consequences:

> Lack of differentiated thinking about a group facilitates more extreme evaluations of individual group members …, stronger inferences from the behavior of one member to the group as a whole …, and out-group discrimination … .
>
> (Linville, Fischer and Salovey)

Climate sceptics are not a historically-oppressed group, of course, and so the risk of discrimination may seem insignificant. Nevertheless, stereotyping, even of socially dominant groups, is harmful to clear thinking and damages the prospects for democratic negotiation over responses to climate change. 'Scientification', which puts environmental issues out of reach of democratic discussion by denominating them matters for scientific experts (Yearley) – the IPCC process, in other words – has been somewhat successful in terms of global inter-governmental politics but has energized the sceptical counter-movement at the national level where agreements have, in fact, to be implemented. Environmentalists cannot get around democracy, and so the polarized politics of climate must, at some point, be addressed.

Political stereotyping has only come to attention quite recently, even in social psychology, and almost all the extant Anglophone research examines American politics. One study of moral stereotyping found that Democrats and Republicans exaggerated the difference between their own values and those of the opposition, predictably enough, but they also stereotyped their *own* side. The authors conclude that:

> The ideological ‘‘culture war’’ in the U.S. is, in part, an honest disagreement about ends (moral values that each side wants to advance), as well as an honest disagreement about means (laws and policies) to advance those ends. But our findings suggest that there is an additional process at work: partisans on each side exaggerate the degree to which the other side pursues moral ends that are different from their own. Much of this exaggeration comes from each side underestimating the degree to which the other side shares its own values. But some of it comes, unexpectedly, from overestimating the degree to which ‘‘typical’’ members of one’s own side endorse its values.
>
> (Graham, Nosek and Haidt 12)

There are two salient points for our analysis here: one is that questioning stereotypes about climate sceptics will not, in any sense, eliminate the ‘honest disagreement’ that we have with them. We simply want to shift from poorly-informed hostility to grounded dispute. The other is that ecocritics might be provoked to ask how their arguments with each other are conditioned by assumptions about what ‘all’ are thought to believe, and how the real diversity of opinion in the field articulates with the broad spectrum of environmental politics – clustered, still, around moderate values – outside the academy.

Graham, Nosek and Haidt’s study showed that Democrats were more likely to stereotype Republicans than vice versa, but scholars too are susceptible. A recent article that confirmed their finding measured traits that were described in biased terms: ‘Need for Cognitive Closure’, ‘Belief in a Dangerous World’, ‘Social Dominance Orientation’ and ‘System Justification’ rather accurately represent liberal stereotypes of conservatives, and so it was not surprising that Democrats saw them as characteristic of the opposition, as the authors concede (Scherer, Windschitl and Graham 206). Even when the authors imagine future experiments to measure ‘traits that are more strongly associated with liberals’, they come up with positive ones such as ‘openness to new experience’. Perhaps if a study measured ‘Obedience to Political Correctness’, ‘Addiction to Government Spending’ or ‘Propensity to Sexual Deviance’, Republicans would be equally likely to stereotype their opponents.

We discuss another striking example of the ‘liberal bias’ conservatives identify in social science research below. For now, we consider how ecocriticism might challenge political polarization

by enabling what social psychologists call 'perspective-taking', or the 'ability to entertain the perspective of another.' (Galinsky and Moskowitz 708) In a series of experiments involving both a natural grouping (young/elderly) and a minimal group (under/over-estimators of the number of dots on a screen), exercises that encouraged subjects to see things from the outgroup's point of view counteracted the propensity to stereotype. The alternative strategy, of suppressing stereotypical assumptions, has been found to have paradoxical effects, presumably because trying *not* to think about something risks making it 'hyperaccessible'. In the exercises used by the experimenters, the most effective debiasing technique involved writing narrative essays from outgroup's the point of view.

This result will come as no surprise to English teachers. If there is one thing students everywhere learn from studying English Literature, it is not whether to be or not to be; it is to question stereotypes by seeing the world from the narrated perspectives of marginalized Others. Reflecting on the 9/11 attacks, the novelist Ian McEwan commented that the hijackers' crimes represented, among other things, a 'failure of imagination':

> If the hijackers had been able to imagine themselves into the thoughts and feelings of the passengers, they would have been unable to proceed. It is hard to be cruel once you permit yourself to enter the mind of your victim. Imagining what it is like to be someone other than yourself is at the core of our humanity. It is the essence of compassion, and it is the beginning of morality (McEwan).

Despite a quite different philosophical heritage, Derek Attridge's account of the 'singularity of literature' similarly emphasizes perspective-taking:

> It is in the acknowledgement of the other person's uniqueness, and therefore the impossibility of finding general rules or schemata to account fully for him or her, that one can be said to encounter the other as other – in the same moment that those rules and schemata shift, however, momentarily, to take account of the now no longer other.
>
> (Attridge loc.796)

For Attridge, the encounter with alterity is far more disruptive than it appears in McEwan's humanistic account. *The Singularity of Literature* is also attentive to the formal uniqueness – the estranging 'how' of an other's viewpoint, not only its individual 'what' – that contributes to the reader's dislocation when they take an other's perspective through writing. Notwithstanding such differences, Attridge and McEwan agree that it is the peculiar power and responsibility of literature to question stereotypes by showing us the world as others see it. When Attridge describes the other as 'that which the existing cultural order has to occlude in order to maintain its capacities and configurations, its value-systems and hierarchies of importance' (30), though, it is clear that he has in mind socially marginalized others, not angry white conservative males. So we need to examine the evidence that climate sceptics, too, are subject to stereotyping.

Deniers, 'Flat Earthers' or Sceptics?

It is a truism of modern literary studies that words – especially those used to label social groups – matter. While conservatives lament the tangled thicket of linguistic prohibitions they call 'political correctness', there are norms of speech that are observed across the political spectrum (norms that President Trump takes pleasure in transgressing). The most direct route to understanding stereotypes of climate sceptics is therefore the range of terms applied to them by their opponents.

The most familiar is the phrase 'climate sceptic', in which the second word conforms to one of its OED definitions by describing 'doubt or incredulity as to the truth of some assertion or supposed fact'. Many scientists, however, resist using this term because, they say, science is inherently 'sceptical', in the sense of questioning assumptions and reserving judgment until the evidence is compelling. A leading warmist website called 'Skeptical Science' says as much at the top of its home page:

> Scientific skepticism is healthy. Scientists should always challenge themselves to improve their understanding. Yet this isn't what happens with climate change denial. Skeptics vigorously criticise any evidence that supports man-made global warming and yet embrace any argument, op-ed, blog or study that purports to refute global warming. This website gets skeptical about global warming skepticism. Do their

> arguments have any scientific basis? What does the peer reviewed scientific literature say?
>
> ("Climate Science Glossary.")

In other words, the people commonly called 'sceptics' actually engage in what psychologists call 'motivated reasoning' and 'confirmation bias', whereas peer reviewed science aims systematically to counteract those aspects of human cognition. Highlighting the 'Most Used Climate Myths (and what the science really says)', the site provides 193 rebuttals of arguments used by 'deniers', from banal reactions like 'It's freakin' cold' (myth #23) to more abstruse objections like CO_2 saturation (#72) and Richard Lindzen's infrared iris hypothesis (#104). With immense patience, and without noticeable rancour, the site provides users with the choice of Basic, Intermediate, and Advanced responses to common misconceptions. John Cook, who set up the site, argues that climate scientists are already sceptics, and so a different term should be used for opponents. 'Contrarian', a term that is in occasional use, accurately conveys anti-environmentalists' relationship to mainstream science, but unfortunately brings with it connotations of 'personal pettiness.' (Van Rensburg 9) There are few acceptable alternatives. 'Denier', the most widely used alternative to sceptic, is inflammatory because it recalls 'Holocaust denial'. The analogy is frequently explicit, as when George Monbiot noted that climate change had been accepted by the tabloid newspaper *The Sun* as well as *The Economist*: 'Almost everywhere, climate change denial now looks as stupid and as unacceptable as Holocaust denial' ('How Much Reality?'). While Monbiot's comment attracted criticism, it was not unprecedented: Al Gore quoted Winston Churchill in *An Inconvenient Truth* to compare climate change to the Nazi threat and denialism to appeasement. *Popular Technology*'s website (for some reason) has collected a whole webpage of journalists and environmentalists drawing on the analogy in different ways and asks why the Jewish Anti-Defamation League has not objected (Andrew). James Delingpole, a vocal British sceptic, resents the way such stigmatizing language seeks to 'close down the debate':

> Suspect all the fuss about AGW [Anthropogenic Global Warming] might be a little overdone? You're just the kind of scummy Nazi-sympathising revisionist who thinks Hitler didn't murder six million Jews…
>
> (Delingpole loc.1118)

Monbiot rejects such protestations as disingenuous:

> Whether we're talking about people who are paid to deny that climate change is happening, or those who use the materials these flacks produce, denial is a precise and concise description of what they do. Their attempt to wriggle out of it by insisting that – by calling them what they are – we are somehow debasing the Holocaust is as contrived as all the other positions they take. We shouldn't fall for it.
>
> ('The Semantics of Denial')

Yet the Holocaust denial analogy has been deployed repeatedly by warmists, and always with stigmatizing intention. It is not necessarily a trivializing analogy – that depends on how much harm ultimately comes of climate change and the scale of social mobilization required to respond to it – but it is still utterly inappropriate: the Nazi genocide is an historical fact, whereas anthropogenic climate change is a hypothesis about current and future geophysical trends. However confident climatologists are about their extrapolations, they would presumably never claim that documented history and models of the future are epistemically equivalent.

Another denigrating term, favoured perhaps by those who find the Holocaust analogy discomforting or impolitic, is 'Flat Earther'. In a speech at Georgetown University, Barack Obama conveyed his impatience with climate sceptics, saying 'We don't have time for a meeting of the Flat Earth Society' ('Obama: No Time'). Secretary of State John Kerry later repeated the metaphor at the COP-21 talks in China: 'we need to make clear that those members of the Flat Earth Society are on the wrong side of history' (***U.S. Department of State)***. However, given that the President of the Flat Earth Society does accept the science of climate change, the term 'Flat Earther' is, according to Chris Fleming, a vacuous slur:[v]

> For most people, being described as a "flat Earther" is an insult. The idea of the Earth being flat is considered not only wrong, but a *model* of wrongness, the gold standard of being incorrect about something.

Not only is 'Flat Earther' less morally objectionable than the Holocaust analogy, its rhetorical implications are somewhat different. While both imply the existence of a large-scale conspiracy

to cover up a counter-consensual 'truth', 'Flat Earther' consigns sceptics to the imagined past – the 'wrong side of history', in Kerry's phrase. Those on the extreme right who deny the Nazi genocide reject the expertise of historians, the testimony of survivors, and the tangible evidence of the death camps – they deny historical facts, in other words – whereas those who question the spherical Earth fly in the face of common sense, with no obvious political motivation. Obama and Kerry's choice of metaphor seems to conform to the climate change communication advice of a report by the Institute for Public Policy Research (IPPR), a British liberal think-tank, which recommends a rhetorical counter-measure to the sceptics' tactical emphasis on scientific doubt and uncertainty:

> Much of the noise in the climate change discourse comes from argument and counter-argument, and it is our recommendation that, at least for popular communications, interested agencies now need to treat the argument as having been won. This means simply behaving as if climate change exists and is real, and that individual actions are effective. … Where science is invoked, it now needs to be as 'lay science' – offering lay explanations for what is being treated as a simple established scientific fact, just as the earth's rotation or the water cycle are considered.
>
> (Segnit and Ereaut 25)

'Flat Earther' links climate science to the lay scientific understanding of the spherical Earth just as Segnit and Ereaut suggest. It lacks the deeply offensive connotations of Holocaust denial, and so is at least a less divisive insult.

In the case of a prominent psychologist who has studied climate scepticism, it appears that academic research, too, can function in a pejorative and stigmatizing fashion. It is impossible to know whether Stephan Lewandowsky intended his study of conspiracist ideation among climate sceptics as a taunt, but the title of the paper suggests it is: 'NASA Faked the Moon Landing—Therefore, (Climate) Science Is a Hoax'. The title, and the many news articles that followed the gist of it, reflects the fact that a very small number of respondents to an online survey of climate-related weblogs (3 out of a sample of 1145) claimed to be climate sceptics who also thought the moon landing was a hoax. The much more robust finding, that free-market ideology was strongly correlated with climate scepticism, was already well-known and

scarcely warranted reporting. Lewandowsky's ethics clearance, research method and statistical analysis were attacked vociferously by sceptics, who considered that they had been slandered – some identifiably as individuals – by the article. Lewandowsky then published a co-authored article that accused his accusers of confirming his diagnosis of conspiracist ideation. It is beyond our scope and purpose to trace the controversy over 'Recursive fury: conspiracist ideation in the blogosphere in response to research on conspiracist ideation'[vi] – interested readers can follow the posted links and draw their own conclusions – but it is worth noting that the effect, if not the intention, of the published papers was to portray climate sceptics as a bunch of 'nutters'. In Lewandowsky's work, peer review has a function beyond its practical advantage as the least-worst way to validate research findings by intersubjective means; it also constitutes the ingroup's badge of pride and honour, displayed in order to antagonize the stigmatized and stereotyped outgroup. Not, for the most part, being academics, the sceptics have no intellectually-reputable recourse, and so they resort to complaints and threats of legal action to express their feelings of injustice. The 'conspiracist ideation' Lewandowsky and colleagues diagnosed in their papers might equally be interpreted as the frustration of intelligent, enquiring people who feel they are being insulted from behind the impenetrable wall of an ivory tower. Their rage recalls the Louisianans of Hochman's study, who were all too aware of being patronized, satirized and dishonoured by what she dubs 'blue-state catcalls taunting red-state residents'. (23) As obvious as it might seem, conservatives and climate sceptics *know what is said about them*; they, too, are reflexive beings, responding to labels such as Hillary Clinton's notorious denunciation of 'half' of Trump's supporters as a 'basket of deplorables' with predictable resentment, defiance and perverse identification (Charles).

Of course, insult and condemnation may simply be justified; an historian or psychologist who 'stigmatized' the Nazis themselves would scarcely attract censure. But again, the analogy is dangerously imprecise, not only because of the unequivocal evil of German fascism, but because Nazis constitute – as NSDAP party members at least – an historically distinct, self-identified group. We accept political scientists' claim that western citizens are less polarized in their beliefs than their party affiliations; hence our contribution to debiasing will include refusal of simple dualistic constructs of warmists and sceptics. Homogenizing the latter as deniers, Flat Earthers, or even just uniformly 'bonkers' (Monbiot, 'The Semantics of Denial') is as factually inaccurate as it is counter-productive.

Scientists, too, employ stereotypes and pejorative terminology. Stefan Rahmstorf, a leading German climatologist, wrote in a briefing paper that:

> The three archetypes of climate sceptics are the Paid Lobbyist (the coal industry, among others, is fighting emission reductions), the Don Quixote (emotionally committed laypeople, frequently pensioners, but also including a few journalists – many of them literally fighting windmills), and the Eccentric Scientist (they are few and far between and are hardly ever climatologists, often coming from related fields like geology).
>
> (Rahmstorf 79)

Rahmstorf's typology of climate scepticism – of the beliefs sceptics may hold – is discussed below; it is a constructive contribution that enables important discriminations to be made. His 'archetypes', though, are dismissive stereotypes that do not advance the discussion or permit more sophisticated analysis.

Perhaps we should be more sympathetic to working scientists. Rahmstorf admits to understandable frustration born of long experience of giving reasoned replies to sceptical challenges:

> Many colleagues have responded to e-mail campaigns launched by the sceptics and got involved in extensive technical discussions with them. Most of us have found that factual arguments, even in unequivocal cases, were unable to convince one single climate sceptic. Nevertheless, the sceptics' arguments should be taken seriously and answered. (82)

The present authors have experienced, in a small way, the kind of futile discussions Rahmstorf describes. Major figures in the field, especially those such as Michael Mann and Phil Jones who are vilified by name, report an unceasing torrent of abusive and sometimes threatening emails. In that context, it is not surprising that scientists should not feel indulgent towards the opposition.

There is, though, increasing acceptance of the principled case for closer attention to terminology. For example, an influential paper by William Anderegg et al. demonstrates that the most highly qualified scientists with the strongest publication record are also the most likely to support the conclusions of the IPCC. Although they list 'climate denier' in their keywords and discuss 'climate change skeptics, contrarians, or deniers' (Anderegg et al. 12107) in their introduction, the language used throughout the essay is non-stigmatizing, if dualistic:

> We provide a broad assessment of the relative credibility of researchers convinced by the evidence (CE) of [Anthropogenic Climate Change] and those unconvinced by the evidence (UE) of ACC.

It is not exactly catchy, but 'unconvinced by the evidence' is, as they point out in a later defence of their paper, 'a categorization that is accurate, objective, inherently more neutral in tone, and makes no assumptions about individuals' funding, ideology, or motives' (Anderegg, Prall and Harold E152). In these respects, their terminology is different from almost all other publications in the field.

It is puzzling, therefore, that Saffron O'Neill and Max Boykoff criticize the Anderegg et al. article in a letter to PNAS, when its authors are actually *more careful* than most other social scientists. Even if their target is not the worst offender, we support their overall conclusion:

> The use of the terms skeptic, denier, or contrarian is necessarily subject-, issue-, context-, and intervention-dependent. Blanket labeling of heterogeneous views under one of these headings has been shown to do little to further considerations of climate science and policy. Continued indiscriminate use of the terms will further polarize views on climate change, reduce media coverage to tit-for-tat finger-pointing, and do little to advance the unsteady relationship among climate science, society, and policy.
>
> (O'Neill and Boykoff E151)

Unfortunately, 'UE' is awkward and unfamiliar, and wrongly suggests that, outwith the scientific community itself, acceptance or rejection of evidence is the key to individual beliefs about climate change, so although we acknowledge the objections to the term 'sceptic,' it is

the one we use throughout this book because it is non-pejorative and widely recognized. There is, on the other hand, no social science terminology at all for those who consider themselves 'convinced by the evidence', presumably because this reasonable default position is shared by the scholars themselves. Our symmetrical approach rejects the notion of a neutral or invisible position, and so, in the absence of alternatives, we borrow the term 'warmist' from the sceptical community, whilst recalling that they (we) too are a diverse bunch.[vii] Clearly *any* terminology could be regarded as reinforcing the very duality we set out to challenge, but given that we will need to make generalizations, we chose to use friendly and accepted terms.

What Do We Know About Climate Scepticism?

To a first approximation, you can probably predict the portrait of climate sceptics that emerges from the academic literature: they are angry conservative white men, middle-aged or older, whose ideas are derived from a small number of conservative think-tanks funded by fossil fuel interests. As Aaron McCright and Riley Dunlap, the leading social science researchers in the field, observe:

> Even casual observers of denialist activities likely notice an obvious pattern; with rare exceptions (e.g., Sallie Baliunas), the most prominent denialists are conservative white males.
>
> (McCright and Dunlap "Cool Dudes" 1163)

A large-scale analysis by Min Zhou of a 2010 dataset of 45119 individuals from 32 countries (in relation to 'environmental scepticism' rather than climate scepticism *per se*) uses statistical modelling to test relationships between a wide range of variables. In particular, Zhou asks whether broad country- or 'macro-level' characteristics, such as overall affluence or tangible environmental problems, correlate with environmental scepticism, or whether the characteristics of individuals matter more:

> The knowledge deficit perspective argues that environmental skepticism stems from ignorance and lack of scientific knowledge. The cultural orientation perspective emphasizes the role of individuals' fundamental cultural orientations (such as religiosity and political ideology) in shaping their levels of environmental skepticism. The social

> trust perspective views environmental skepticism as a result of people's general distrust of social institutions. The competing priority perspective suggests that when facing more salient risks other than environmental threats, people tend to employ skepticism as a mechanism to justify the lower priority assigned to the environment.
>
> (Zhou 62)

Zhou's analysis is impressively complex – he tests a total of 13 hypotheses – but the short answer is that macro-level country characteristics do not have a statistically significant relationship to environmental scepticism, whereas demographic differences do: men are consistently more likely to be sceptical than women; old people are more sceptical than young; and rural residents are more sceptical than city-dwellers. Moreover, individual-level characteristics are also significant: people are more likely to be sceptical if they are religious, conservative, poorly educated, mistrustful of science and society, and lacking in self-assessed knowledge of environmental issues. Income level alone is not significant.

Thus far, the stereotype is confirmed, as one might expect – stereotypes are exaggerated and reified versions of observable differences, otherwise they would be completely dysfunctional in social cognition – but Zhou adds a crucial qualification:

> While none of the specified country-level variables have statistically significant effects, there is indeed cross-country variation in environmental skepticism … . This cross-country variation may be due to unique historical and cultural contexts of individual countries, and cannot be simply attributed to national differences in affluence, world society connections, ecological conditions, and levels of democracy. (73)

Why does Canada have the lowest overall level of environmental scepticism in his study, and the Philippines the highest? Since broad variables do not account for it, it is necessary to attend to 'unique historical and cultural contexts of individual countries'. Until the present study, research into climate scepticism has seldom done so.

The findings of another cross-national study, this time examining climate scepticism specifically and drawing on an International Social Survey of 14 countries, are somewhat at variance with

Zhou. Bruce Tranter and Kate Booth are surprised to find that 'climate sceptics are not merely those who care little about the environment' (Tranter and Booth 159), which perhaps accounts for the difference – Zhou's paper studies the latter. They find that 'Age is not a particularly consistent predictor of climate scepticism, nor it appears is education, city location, religious orientation or postmaterial values' (161). Like Zhou, they conclude that:

> The association between political parties on the left of the political spectrum is a far more consistent indicator of environmental concern, while in all countries with the exception of Australia, self-assessed knowledge of the solutions to environmental problems is associated with increased concern over environmental issues. (160)

So although political orientation, gender and indifference to environmental issues are 'relatively consistent predictors of climate scepticism on a country by country basis' (162), Tranter and Booth too acknowledge the limitations of population-level analysis:

> … the factors that correlate with climate scepticism appear to vary according to the political and cultural context of each country. Contrary to expectations, climate sceptics are not merely the mirror image of environmentalists. (162)

While it is not a statistical analysis, our trans-national research elaborates the cultural context of four countries and re-affirms that anti-environmentalism in all of them has a history and cultural logic that is not merely the inverse of the history of environmentalism. Moreover, a few of the sceptics in our study, like Peter Taylor in the UK and Claude Allègre in France, even have impressive pro-environmental credentials.

Climate scepticism is, however, a minority viewpoint everywhere. Tranter and Booth find climate scepticism ranges from 2% of their Spanish sample and 4% of their Swiss sample to 12% in the USA, 15% in Norway, and 17% in Australia. One might observe that these three are all major fossil fuel producers, but then so is Canada with a prevalence of just 8%. Anthony Leiserowitz's review of global opinion surveys finds that:

> Large majorities worldwide believe that human activities are a significant cause of climate change, yet many continue to confuse and conflate global warming with depletion of the ozone layer, which in turn leads many to support ineffectual solutions, such as the banning of aerosol spray cans. However, respondents from Europe, India, China and many developing countries are significantly more convinced that human activities are causing climate change than respondents from the United States. In turn, large majorities worldwide appear to prefer a precautionary approach, agreeing that action is needed now, even if there are major economic costs involved.
>
> (Leiserowitz 35)

Climate change is, on the whole, a poorly-understood source of moderate concern for the majority of people surveyed, but there are substantial cross-national differences about which very little is known. There are, after all, plenty of conservative white men in Canada and Germany, but they are less often climate sceptics. It should also be noted that Leiserowitz finds that global warming is 'a relatively low priority compared to other pressing world, national, or even other environmental issues'.

The USA consistently ranks high in international surveys of climate scepticism. The most frequent explanation for this American exceptionalism is that the US conservative movement identified the threat from climate science and politics to free-market, fossil-fueled capitalism in the early 1990s, and mobilized against it rapidly and successfully, as Boussalis and Coan argue:

> Specifically, extant literature suggests the following process: (1) conservative foundations and corporate groups provide the material base for pressing contrarian interests … ; (2) CTTs [Conservative Think Tanks] transform this material base into information, generating the narrative of climate denial … ; (3) the conservative ''echo chamber''— conservative media, sceptical blogs, and sympathetic policy makers— mediate and amplify key counterclaims … ; and (4) conservative politicians susceptible to the anti-climate messages seek to stymie policy changes in Congress.
>
> (Boussalis and Coan 90)

Various elements of this sequence can be traced in many scholarly articles and books on climate scepticism (McCright and Dunlap 'Challenging Global Warming'; McCright and Dunlap 'Anti-Reflexivity'; Dunlap and McCright; Washington and Cook). For example, a predecessor to the present analysis that surveys 108 books on climate scepticism refrains from engaging with any one of them *as a text* (Dunlap and Jacques). Instead, the article investigates links, either on the part of the author or the publisher, with such organizations as the Cato Institute, the Heartland Institute, the Marshall Institute, and the British Institute of Economic Affairs, finding that '72% [of 108 books in total] have a verifiable link with a CTT' (705). Dunlap and Jacques note, moreover, two significant forms of diffusion from the original concentration of books published by American CTTs: climate scepticism is now published in 'nations that have a recent history of staunch conservative governments, influential CTTs, and a strong fossil fuels sector [such as] Canada, Australia, and the United Kingdom', and there are increasing numbers of 'citizen scientists' as well as industry-funded spokespersons involved:

> As denial evolved over time and spread throughout a larger segment of American society …, as well as to other nations, the seeds sown by the contrarians have germinated and a wide range of individuals without backgrounds in natural science and thus relevant credentials for evaluating climate science feel free to write books denying AGW – and often publish them on their own!
>
> (712)

According to their analysis of the terminal degrees of authors, 'only 39% of … volumes are authored or edited by individuals with scientific credentials as normally defined in academic circles' (i.e. PhD in a natural science) while '19% of the books are produced by individuals with other doctorates, primarily in economics, politics, and law, and the remaining 42% by individuals without a doctorate' (711). Perish the thought! A little later, Dunlap and Jacques sniff that 'not a single denial book is published by a university press' (712) – although some sceptics would consider that *prima facie* evidence that the liberal academy has already made up its mind about climate change. Which is largely true.

We need to go carefully here, as there are complex issues at stake. For one thing, peer review is not perfect. Indeed, it may be compared to democracy, which Winston Churchill called 'the

worst form of Government except for all those other forms that have been tried from time to time' ('Democracy'). Peer review (or 'mates review', as it is known among British sceptics) is subject to numerous potential distortions, but Dunlap and Jacques are correct to point out that it is reasonably effective at preventing egregious errors from circulating. In the sceptical literature, as they observe, 'denial claims are continually recycled, no matter how many times they are refuted by empirical test or shown to be logically untenable' (712). Moreover, the present authors know too well that university positions are competitive and academic expertise hard-won, so it can be galling when the views of CTT spokespersons, auto-didacts and ill-informed non-specialists are taken as seriously as those of fellow scholars. In the USA, in particular, CTTs have largely accomplished their core purpose, as Jacques, Dunlap and Freeman acknowledge:

> A key to the success of CTTs has been their ability to establish themselves as a true 'counter-intelligentsia' that has achieved equal legitimacy with mainstream science and academia – both of which have been effectively labelled as 'leftist' in order to legitimise CTT's as providing 'balance'.
>
> (Jacques, Dunlap and Freeman 356)

At the same time, sceptical objections to peer review are not without grounds and conservatives are correct to perceive 'liberal bias' in universities. To take just one striking example, there are numerous studies of climate scepticism in social science, but no studies at all of 'alarmists' who arguably exaggerate the risks of climate change – sometimes to an absurd degree (e.g. Oreskes and Conway *The Collapse of Western Civilization*). In this respect, the situation resembles the field of political psychology, which tends to pathologize conservativism, as Haidt points out:

> The goal of so much research was to explain what was wrong with conservatives. (Why don't conservatives embrace equality, diversity, and change, like normal people?)
>
> (185)

Furthermore, scepticism represents a challenge to the 'scientification' of climate change that is, in some respects at least, quite welcome. We return to these thorny issues of expertise and the democratization of knowledge in the penultimate chapter and conclusion.

The most influential research on climate scepticism locates its origins in a conspiracy of industrial interests and CTTs (Washington and Cook; Jacques, Dunlap and Freeman; McCright and Dunlap 'Anti-Reflexivity'; Boussalis and Coan; Hoggan and Littlemore). Historians Naomi Oreskes and Erick M. Conway had particular success with their book and documentary film, both entitled *Merchants of Doubt*, which identify the strategies and the specific personnel involved in decades of conservative activism against environmentalist and public health movements. According to their well-argued narrative, marketing methods were developed from the 1960s onward to help the tobacco industry stave off regulation, increased taxation and legal liability once medical evidence began to accumulate that cigarettes caused cancer and heart disease. The tobacco companies learned, with the help of their 'Mad Men', to sow doubt in the mind of the public about the link between smoking and early death:

> This was the tobacco industry's key insight: that you could use normal scientific uncertainty to undermine the status of actual scientific knowledge. As in jujitsu, you could use science against itself. "Doubt is our product," ran the infamous memo written by one tobacco company executive in 1969, "since it is the best means of competing with the 'body of fact' that exists in the minds of the general public.
>
> (*Merchants of Doubt* 34)

The strategy was extraordinarily successful: not only did smokers have a vested interest in ignoring inconvenient truths, but the conventional news media felt obliged to present 'both sides' of any story, regardless of the real balance of scientific evidence. TV viewers saw scientists arguing with other (industry-funded) scientists, and thought the medical case remained controversial. It was only when whistle-blowers from within the industry started leaking documents proving deliberate mendacity that the defence was finally destroyed.

A very similar strategy was used to attack climate science, but with two significant updates: the counter-arguments now came from CTT 'experts,' not from talking heads in white coats who

could easily be seen as industry stooges, and the CTTs also fomented vicious campaigns against individual climate scientists. The most remarkable sequence in the documentary of *Merchants of Doubt* is an interview with journalist Marc Murano, currently Communications Director for the conservative lobby group Committee For a Constructive Tomorrow (CFACT) but previously a producer for the right-wing talk radio host Rush Limbaugh. He acknowledges with pride that the sceptical team working for James Inhofe, a Republican senator from Oklahoma, decided to attack the scientists personally, rather than entering the scientific debate:

> We went after James Hansen and Michael Oppenheimer and had a lot of fun with it. We mocked and ridiculed James Hansen. I was authorized – I couldn't believe they let me do this – I did a two-part, probably 10000 word, unbelievably scathing critique on James Hansen. I'm not going to question his scientific work, but in terms of his influencing the public.

Eventually Murano set up ClimateDepot.com so that he could be even *less* constrained in his personal attacks on climate scientists.

Murano relishes his reputation as the climate sceptics' 'attack dog' and is unrepentant about publishing scientists' email addresses so that right-wing trolls can send them obscene and threatening emails. And he is just one, particularly prolific and articulate, operative. Oreskes, Conway, Washington, Cook and other academics and journalists have gathered plentiful evidence of deliberate attacks on scientists: not only *ad hominem* articles and email campaigns, but spurious Freedom of Information requests, attempts to have academics sacked or defunded, and of course the email hacking attack that gave rise to 'Climategate'. By sponsoring such tactics, CTTs threaten academic freedom and poison public political discourse. Our analysis is not naïve about this reality, and our efforts to understand climate scepticism don't imply that we condone it.

However, the deepest objection to *ad hominem* arguments is not that they are cruel or unfair or even, potentially, incitements to physical violence; it is that they are redundant. All human beings have interests, material and otherwise, that potentially affect their selection and acceptance of relevant evidence; no one is exempt from motivated reasoning. Just as Oreskes

and Conway cast doubt on Fred Singer's statements by showing he was funded by Big Oil, climate sceptics claim that climate scientists' arguments are shaped by the interests of 'Big Eco' and the priorities of liberal-biased funding agencies. While the present authors do not accept that these are precisely symmetrical situations, we resist invoking *ad hominem* arguments against the sceptics in this book because they are, finally, irrelevant.

Much academic research on climate scepticism unveils the conservative conspiracy to undermine the scientific consensus or pathologizes and stigmatizes sceptics. There are, though, a number of useful typologies that apply to the beliefs sceptics hold, rather than their political affiliations. The first comes from Stefan Rahmstorf:

> We can distinguish trend sceptics (who deny there is global warming), the attribution sceptics (who accept the global warming trend but see natural causes for this), and the impact sceptics (who think global warming is harmless or even beneficial). Representatives of the various sceptics' camps quarrel, sometimes ferociously, in internet forums.
>
> (77)

Opinion surveys that have sought to distinguish between these different brands of climate scepticism have found that 'impact scepticism appears far more common than both trend and attribution scepticism' (Poortinga et al. 1019), which suggests a basic rationality to public opinions – the long-term impacts of climate change are indeed much less certain than the existence of the warming trend and its attribution to predominantly human influences. However, contrary to Rahmstorf's view, Poortinga et al. found that these were not wholly independent views, and that 'people who are sceptical about one aspect of climate change also tend to be sceptical about other aspects' (1019). For Bob Henson, the three beliefs are part of a series of fall-back positions he outlines in a satirical summary of 'the classic sceptical view':

> *The atmosphere isn't warming; and if it is, then it's due to natural variations; and even if it's not due to natural variation, then the amount of warming will be insignificant; and if it becomes significant, then the benefits will outweigh the problems; and even if they*

> *don't, technology will come to the rescue; and even if it doesn't, we shouldn't wreck the economy to fix the problem when many parts of the science are uncertain.*
>
> (Henson 272, it.orig.)

While this probably does epitomize the strategy of a CTT such as the Heartland Institute, it does not capture the diversity of sceptical viewpoints we have found. The texts we analyse incorporate a wide array of claims, some admittedly consistent across several sources, but many quite idiosyncratic. Moreover, we find that scepticism means somewhat different things in the four countries we study. In the USA, climate science attracts the conspiracist language of 'hoax,' whereas in the UK, where there is cross-party support for the IPCC process, sceptics see themselves as 'heretics' resisting an overweening orthodoxy. German climate sceptics frequently adopt a similar rhetoric, albeit with a Lutheran spin, while in France, the term 'imposture' is used by critics who claim to be following in the great tradition of French philosophical rationalism by revealing the 'untruths' of climate change science.

As population-level research on climate scepticism has accumulated, there has been a proliferation of scholarly terminology. Indeed, James Painter wryly suggests that 'Discussion about the typology of scepticism has generated such a large amount of analysis by climate scientists, sociologists, and media academics that a cynic would say we need a new typology of typologies.' (Painter, *Poles Apart* 20)

Painter himself added 'policy sceptics', such as Nigel Lawson and Bjørn Lomborg (Painter "Communicating Uncertainties"), who claim not to challenge the scientific consensus itself, but question environmentalists' policy prescriptions. *Living in Denial*, Kari Norgaard's ethnography of a Norwegian town (fictionalized as 'Bygdaby'), derives a related category of 'implicatory denial' from the sociologist Stanley Cohen, in which what is denied is not the literal truth of climate change, but a minimization of the potential implications for most Western lifestyles. Norgaard mournfully acknowledges:

> What I observed in Bygdaby – indeed, what we all can observe in the public silence on climate change in the United States and around the world – is 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.
>
> (Norgaard loc.277)

Some scholars seek to categorize discourses, rather than beliefs or opinions, such as Nat Segnit and Gill Ereault, whose study of British sceptical discourses is discussed in the UK chapter below. Kersty Hobson and Simon Niemeyer derive a five-way typology from their analysis of respondents' scripts during an extended process of deliberative democracy in Australia, including emphatic negation, unperturbed pragmatism, earnest acclimatisation, noncommittal consent and the nigh-oxymoronic proactive uncertainty (Hobson and Niemeyer 402). Stuart Capstick and Nicholas Pidgeon's mixed methods study of the UK public subsumes Rahmstorf's trend-attribution-impact typology under the heading of 'epistemic scepticism', along with doubts about scientific propriety and the workings of the IPCC. It goes on to define 'response scepticism', which combines Painter and Norgaard's observations with 'doubts around human nature and the human condition' (Capstick and Pidgeon 391) that have long been recognized in cultural theory of risk as the signature of the fatalist (Adams 167-68). They also take note of scepticism about the way climate change is communicated in the media, and 'climate change fatigue' ('you know: "oh god, not another polar bear"' (394)), which is no doubt salient in popular response scepticism if not likely to feature in sceptical publications. Finally, Willem van Rensburg suggests reorganization of the phenomena into three categories: evidence, process and response. The first type of scepticism is '*core* and *definitional*' – anyone who refuses to accept the scientific evidence is a sceptic by definition – whereas the latter two are 'the concomitant class of critiques that are highly congruent with and supportive of evidence scepticism' (Van Rensburg 6). As he points out, neither Mike Hulme nor Naomi Klein are evidence sceptics, but they have expressed scepticism about the IPCC process and the neoliberal political response to climate change respectively.

The development and refinement of such typologies is obviously helpful for understanding climate scepticism at the level of national populations and media ecosystems. At the same time, it contrasts strikingly with the paucity of academic taxonomizing of the other side (warmists? catastrophists? Elon Musk-eteers?), despite the diversity of discourse and belief that lies there too. More importantly, the typological approach itself risks masking the complex

reality admitted by Hobson and Niemeyer, whose five discourses were derived from close interaction with thirty-five individuals: with few exceptions, 'mapping specific individuals onto each category proved infeasible, as many had a mix of viewpoints and were thus spread across several categories' (Hobson and Niemeyer 402). They go on to question whether the five sceptical discourses they identify are applicable beyond Australia, where there is a Climate Sceptics Party and sceptical conservative newspapers, and where leading politicians frequently question climate science. While our literary critical methodology renders us unable to answer that particular question – most of our authors are Emphatic Negators who betray little vacillation or ambivalence – it is important to recall that, for climate change as for other political differences, the sound and fury of polarization drown out enormous inner turmoil as well as effacing individual diversity. We therefore return, in the final subsection of the introduction, to the rationale for a consciously individualizing approach to climate sceptical texts.

Counteracting Cultural Polarization

We have already encountered social science scholarship that acknowledges the heterogeneity of climate scepticism and the importance of cultural differences, but then adopts a statistical, population-level methodology that suppresses the first and gives no account of the second. This is not a criticism; it is simply the way social science research is usually conducted. Moreover, scholars frequently admit the limitation: in addition to the examples already given, Boussalis and Coan accept that 'aggregating across diverse science and political themes [using a text-mining methodology] masks important heterogeneity in sceptical discourse' (97). It does, though, suggest there is a need for qualitative analysis that is at once *rougher and finer-grained* than quantitative research: trans-national, so that broad cultural differences can be assessed at that level, and at the same time open to the diversity and singularity of individual sceptical texts.

Such an approach is far from usual in ecocriticism, not only because it considers anti-environmentalist artefacts, but because it seeks to compare cultural differences in environmental risk perception between four different countries. In that sense, we engage self-consciously with what Timothy Clark calls the 'methodological nationalism' of ecocriticism: 'Methodological nationalism names the assumption, usually implicit but all-pervading in many

critical readings, that the nation-state and its boundaries form a natural or at least self-evidently justified context for discussion of the literary and cultural artefacts that arise within its borders.' (Clark 54-55) While ecocritics frequently work across a range of 'national' literatures, especially those with postcolonial interests, many are constrained by linguistic ability and the professional demands of academia to effective nationalism (or Anglophonia, at best). Besides two of the present authors, critics such as Clark, Hannes Bergthaller, Kate Rigby and Ursula Heise who are able to undertake genuinely bilingual ecocriticism – all of it Anglo-Germanic, in the instances given – are few and far between. In some ways, then, the organization of our analysis reflects the outmoded assumption that Britain, France, Germany and the USA form, individually and severally, a 'justified context' for discussion of the texts we have chosen; we suspect that French rationalist and eco-sceptical traditions, the 'paranoid style in American politics' (Hofstadter), British irreverence and hyperbolic comedy, and the centrality of environmentalism to contemporary German identity are vital to comprehending the distinctive forms that scepticism takes in those countries. At the same time, though, we opted to co-author this book because national boundaries are not 'self-evidently' justified. As Sheila Jasanoff acknowledges, 'Some will charge that cross-*national* comparison, in particular, is full of intellectual dangers: it reifies national boundaries, overlooks heterogeneity and change, and perhaps even reinforces parochial stereotypes of national identity'. (Jasanoff 11) Our treatments of each national culture of climate scepticism are designed, like Jasanoff's transnational analysis in *Designs on Nature*, 'to bring into sharper relief its … heterogeneity, especially as displayed in its multifaceted, culturally differentiated encounters with science and technology.' Moreover, we will identify global commonalities and cultural differences in light of the variable extent to which organized scepticism has served as a transnational counter-movement to global environmentalism.

It remains only to recall how and why our 'methodological transnationalism' seeks to use close reading and perspective taking to counteract polarizing stereotypes. The trend away from bipartisan consensus on climate change is clear. Indeed, it is arguable that *politicizing climate change* – representing it consistently *as* a partisan issue – has been at least as important to CTTs in the USA and the UK as casting doubt on the science. Their efforts, lately reinforced by leftists' adoption of the issue precisely *as* a challenge to capitalism (Klein), have been remarkably successful. In the USA, McCright and Dunlap report that:

> The 18-point difference between the percent of liberals (67.1 percent) and the percent of conservatives (49.4 percent) who believe global warming has already begun in 2001 becomes a 44-point difference in 2010—74.8 percent for liberals and 30.2 percent for conservatives. A similar trend exists for party identification, as the gap between Democrats and Republicans grows from 11 percent to 41 percent over the decade.
>
> (McCright and Dunlap "The Politicization of Climate Change" 175)

Dunlap and McCright's finding is replicated in research on the UK (Poortinga et al.), whereas polarization is less pronounced in non-Anglophone populations. Still, scholars such as Guillemot and Aykut betray an awareness of the risk when they seek to use Science and Technology Studies to pre-empt a 'bipolar climate' in France. Andrew Hoffman argues that, in the USA at least, climate change is approaching what he calls 'logic schism':

> … a contest … in which opposing sides are debating different issues, seeking only information that supports their position and disconfirms their opponents' arguments. Each side views the other with suspicion, even demonizing the other, leading to a strong resistance to any form of engagement, much less negotiation and concession.
>
> (Hoffman 9)

He suggests that 'the debate is reaching a level of polarization where one might begin to question whether meaningful dialogue and problem solving has become unavailable to participants' (3) If he is correct, our attempt at a depolarizing analysis may be too late.

Admittedly, our correspondent who discerned a change in the colour of the sun was uninterested in any counter-evidence, and Hobson and Niemeyer's experiment showed that some Emphatic Negators were not open to reasoned discussion – but they were two participants out of a study group of 103. McCright and Dunlap's study evidences a growing gap between liberals and conservatives (ideological polarization) and Democrats and Republicans (partisan polarization), acceleratingly strikingly after 2008, but around one third of Republicans accepted the science of climate change all along and they found no discernible trend in moderate opinion on climate change. McCright and Dunlap acknowledge that polarization over

time might be evidence of party and ideological sorting, rather than change in fundamental beliefs about climate science. In other words, accepting or rejecting the scientific consensus, especially on an issue seen as a low priority by many citizens, becomes simply 'the kind of thing people like us do'.

Perhaps contemporary anxieties – about Donald Trump, about so-called 'social' media – are motivating nostalgia for a lost golden age of consensus and mutual respect that careful historical perspective would dismiss. America, Germany and France in the late 1960s, or 1970s Britain, were very far from polite or harmonious: the Red Army Faction's seven year campaign of terror took 47 lives in Germany, while the Provisional IRA's war with Ulster Unionists and the British state killed at least 3600 from 1970 to 1997. There is evidence of growing polarization of opinion on climate change in the twenty-first century, but differing views seem to have no relationship to individuals' carbon emissions at the population level; instead, higher emissions are closely associated with greater wealth and the country, province or state of one's residence. The appearance of a 'culture war', when diverse, largely moderate, opinions remain the norm, is sustained by the political stereotypes that prevail within the ideological filter bubble each of us inhabits.

Climate change already poses an inherent challenge for what psychologist Dylan Evans calls our 'risk intelligence', because of the substantial scientific uncertainty and dizzying temporal and spatial scale of its possible impacts. As he points out:

> It is hard to occupy the middle ground, treating global warming as a serious threat but without freaking out about it. Once we allow ourselves to start contemplating it at all, our minds quickly become overwhelmed.
>
> (Evans 57)

Warmists have, as sceptics never fail to observe, a penchant for worst-case thinking, which tends, Evans says, to 'substitute imagination for thinking, speculation for risk analysis, and fear for reason'. The ability to estimate climatic risks is still further debilitated by the filter bubble of biased media coverage Internet users increasingly inhabit, which sustains our stereotypes of the enemy without. Evans relates how, in the aftermath of the Iraq War, he realized that he

inhabited a liberal filter bubble, and so decided to seek out contrary views deliberately. Reading Donald Rumsfeld's autobiography and listening to conservative talk radio (extensively, not just the 'embarrassing sound bites' played by the liberal media), he was forced to question his simplistic assumptions. 'It is essential to retain a healthy degree of skepticism', Evans admits, 'but such skepticism should be applied impartially to those from all sections of the political spectrum and not reserved exclusively for those we disagree with' (91).

Ecocriticism itself is a filter bubble. If you research 'climate fiction', you will read dozens of novels that endorse or (more usually) exaggerate the IPCC consensus; you *might* read one – Michael Crichton's *A State of Fear* – that contradicts it, and you will probably not think highly of it. Students occasionally venture sceptical opinions, but most keep silent out of rational self-preservation. Why challenge the deeply held beliefs of the person who is grading you, after all? If your social circles are largely liberal and educated, it is easy to underestimate how widespread climate scepticism actually is, and hard to understand why anyone would endorse it.

In that context, it is all the more urgent to ask: 'who do climate sceptics think they are?' Not only can questioning climate sceptic stereotypes contribute to depolarizing the debate in the interests of democratic progress; it can help recalibrate climatic risk intelligence, it can diversify the voices heard at environmental debates, and it can promote the art of perspective-taking.

We are more various than we know.

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[i] "Does Demonizing the Other Side Promote Constructive Debate Over Climate Change?" *Watts Up With That?*, 21 Apr. 2016, wattsupwiththat.com/2016/04/21/does-demonizing-the-other-side-promote-constructive-debate-over-climate-change/. https://wattsupwiththat.com/2016/04/21/does-demonizing-the-other-side-promote-constructive-debate-over-climate-change/ The supposed author of the blog post, Professor G. Cornelis van Kooten, later admitted that he had only drafted the post, and 'left it to another person to rewrite in a journalistic fashion' (personal communication).

[ii] The notion of a 'national literature' is problematic in several respects. One of our aims, discussed below, is in fact to overcome the methodological nationalism of ecocriticism. Nevertheless, we use this phrase throughout the book for the sake of economy.

[iii] See this article for a visualization of party sorting, and a reasoned defence of polarization: Thomas' https://www.nytimes.com/2017/10/12/opinion/democrats-are-playing-checkers-while-trump-is-playing-chess.html (accessed on 29 June 2018).

[iv] Over the period during which we were writing this book, moral psychologist Jonathan Haidt set up the 'Heterodox Academy', whose members pledge: *"I believe that university life requires that people with diverse viewpoints and perspectives encounter each other in an environment where they feel free to speak up and challenge each other. I am concerned that many academic fields and universities currently lack sufficient viewpoint diversity—particularly political diversity. I will support viewpoint diversity in my academic field, my university, my department, and my classroom."* Taken from:
"FAQs." *Heterodox Academy*, 26 June 2018, heterodoxacademy.org/about-us/faqs/.*https://heterodoxacademy.org/frequently-asked-questions/*

[v] According to Stéphane Foucart, journalist for *Le Monde*, the expression 'Flat Earth' alludes to the reliance of the solar radiance theory of global warming (a popular challenger to the greenhouse gas hypothesis, defended by Courtillot and Allègre among others) on a flat earth model. If so, what appears to be a mere slur is actually an erudite criticism.

[vi] http://scienceblogs.com/pharyngula/files/2014/03/fpsyg-04-00073.pdf .

For a pro-Lewandowsky account of the controversy: Lombrozo, Tania. "What Do Aliens, Climate Change And Princess Di Have In Common?" *NPR*, NPR, 10 Dec. 2012, http://www.npr.org/sections/13.7/2012/12/10/166733644/what-do-aliens-climate-change-and-princess-di-have-in-commonwww.npr.org/sections/13.7/2012/12/10/166733644/what-do-aliens-climate-change-and-princess-di-have-in-common.; For a critical perspective: "Stephan Lewandowsky's Slow Motion Psychological Science Train Wreck."http://www.npr.org/sections/13.7/2012/12/10/166733644/what-do-aliens-climate-change-and-princess-di-have-in-common . For a critical perspective: https://wattsupwiththat.com/2012/09/05/stephan-lewandowskys-slow-motion-social-science-train-wreck/ .

Lewandowsky co-authored an account of the 'war on science' to which he has allegedly been subjected: Lewandowsky, Stephan, et al. "The Subterranean War on Science." For discussion of the third paper in the sequence: Lewandowsky, Stephan, et al. "The Subterranean War on Science." *Association for Psychological Science*, www.psychologicalscience.org/index.php/publications/observer/2013/november-13/the-subterranean-war-on-science.html.http://www.psychologicalscience.org/index.php/publications/observer/2013/november-13/the-subterranean-war-on-science.html . For discussion of the third paper in the sequence: https://www.theguardian.com/environment/climate-consensus-97-per-cent/2015/jul/08/climate-denial-linked-to-conspiratorial-thinking-in-new-study

[vii] It is helpful to remind the reader of linguistic and cultural differences here. The term "réchauffiste" does not appear in any official dictionary in France (*Le Petit Robert, Le Larousse*, etc.). Nor is it used by Claude Allègre in his book *L'Imposture climatique* [The Climate Imposture] or by French climate sceptics on their main website *Climato-réalistes.* When the word "réchauffiste" is used online, it most often appears in quotation marks as if to maintain a certain distance with respect to the English term. The extent to which French climate scepticism has or has not taken up strains of Anglophone climate scepticism will be discussed in the fifth chapter.