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The sublime of climate change

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A thesis submitted in September 2017 in partial fulfilment of the requirements for the degree of

Doctor of Philosophy

SPRU - Science Policy and Technology Research Unit
BMEc

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I hereby declare that this thesis has not been, and will not be, submitted in whole or in part to another University for the award of any other degree.

Signed: .....

Nicholas Gallie

Thesis summary

Thesis title: The sublime of climate change.

The category *sublime*, when applied to the natural world, has long been associated in Western culture, with extremes of vastness and power. When encountered, that which is deemed sublime, by virtue of these qualities, has the effect of overwhelming the mind, such that it is thrown simultaneously into a state of astonishment, admiration and horror. We are both humbled and elevated by what we behold and momentarily struck dumb, such that, in its Kantian formulation, our appreciation of that which we take to be sublime, granted us through the powers of reason, has the effect of ennobling us, as moral beings.

The concept of the sublime has continuously evolved from its classical origins right up to its present day post-modern formulations. The diversity of its forms suggests that the sublime can be regarded as polythetic. My thesis examines, how, through its different formulations, the sublime may be meaningfully applied to our perceptions of present day climate change, and the different implications arising from these applications.

My thesis asks: what is the sublime of climate change? When we look at climate change through the lens of the sublime, what do we see, and what is obscured? What is the effect on us, of opening ourselves to climate change as sublime? What implications might the sublime of climate change have for the future direction of society and therefore for the construction of climate policy and for its communication?

Original research, in the form of in-depth, unstructured, one to one interviews was conducted among senior climate scientists, business leaders and policy makers, writers and academics, inviting them to explore the theme of climate change, science and the sublime. My thesis findings are derived from my analysis of these discussions.

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The project, of course would be nothing without the input from all those who contributed to the interviews. I would name you in person but have promised to protect your identities. But it is difficult for me to state how indebted I am to you for the insights you shared with me.

I am indebted to the University of Sussex Library and the British Library for source materials including access to online academic journals.

As I count my practices of meditation and tai chi as parallel and vital sources of insight that have contributed to the project, I give my thanks to my teachers Prem Rawat and Mark Stevenson.

Finally to my family, thank you for your inspiration and support over the long haul.

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Nick Gallie. East Sussex. September 2017.

Chapter 1 Introduction

Conventionally, a doctoral thesis is written with the aim of bringing some significant new knowledge or insight to bear on a topic of academic importance or concern. This thesis, by contrast, is written with the aim of bringing some significant – hitherto largely unapplied – *old* knowledge to bear on a major current topic of academic importance and concern: anthropogenic climate change, in order to develop new insights. In the following, anthropogenic climate change is discussed from the perspective of *the sublime*.

Right at the end of my research process, having interviewed some twenty senior climate scientists, policy makers, advisors, lobbyists, NGO principals, business leaders, clerics and academic commentators on climate change, I spoke to a senior environmental ethicist and philosopher DC about her view of the sublime and its possible relevance to present day perceptions of climate change. She was reminiscing about the Arctic being an important site of the historical sublime, when suddenly she changed topic and asked me what was it that brought me to first think of climate change as sublime. And I told her it was the Arctic, but not the Arctic as sublime, but the Arctic as loss of the sublime.

We understand the Arctic, as sublime, when we see it as a vast, empty region of wilderness, of whiteness, of exotic, ferocious life clinging to the peripheries of possibility, of deep silence, of seasons of perpetual darkness and perpetual light, and of extraordinary lights; a place of unimaginable coldness, all but void of human souls, and a place of overwhelming contrast to the industrial world of temperate climes. To journey to the Arctic and experience this pristine world, was to journey into the sublime; to be lifted out of oneself and overwhelmed by nature's raw magnificence.

And this is how the Arctic is largely still imagined, thanks to grand media productions such as *The Frozen Planet*. But the Arctic is changing, and changing more radically and rapidly than any other region on Earth, due to global warming. And the consequences of those changes will be visited on the planet as a whole, as the global climate responds to dramatic shifts in temperature gradients and atmospheric composition. The Arctic is changing from white, as the ice cap melts, into a deep oceanic blue.

The oceanographer and sea ice scientist Peter Wadhams recounts how, in 1978, when humankind first saw the image of the Earth from space, the planet was white at both poles. Now, in the summer, only 40 years later, he notes, one ‘end’, ’at the top of the planet’ is blue: a change from white to blue, visible from outer space:

> *We have created an ocean, where there was once an ice sheet. It is Man’s first major achievement in re-shaping the face of the planet, and it is, of course, an unintended achievement, with dubious and possibly catastrophic consequences to follow.*
>
> (*Wadhams 2016.2*)

The claim that this is the first major human re-shaping of the face of the planet is questionable. Nonetheless, this sudden aesthetic shift in register on a planetary scale is what began my thinking of climate change as sublime. The sublime is an aesthetic, an aesthetic of extremes, often associated or contrasted with beauty. Classically, only form can possess beauty, and the beauty appertains to the form. The sublime is the aesthetic of the formless and is unconfined. The sublime spills out, undoes and overwhelms. The blue Arctic spills out into the Atlantic and Pacific oceans changing the global climate system for ever.

Reflecting on a lifetime spent on and beneath the Arctic ice, Peter Wadhams observes:

> *I have spent my entire scientific life, from the age of twenty one, working on the science of sea ice and the polar oceans. What do these changes mean to me as I prepare to say a personal farewell to this magical landscape? Overwhelmingly I feel that this is a spiritual impoverishment of the Earth as well as a practical catastrophe for mankind….*
>
> (*ibid.5*)

“Overwhelmingly I feel that this is a spiritual impoverishment of the Earth”. Twelve words that reach out to the sublime of climate change. Let us consider them more deeply.

Overwhelmingly: it is in the nature of the sublime to overwhelm; to escape confinement.

I feel: in these two words, Wadhams opens up a vast lacuna in the discourse on climate change: the realm of feeling. The sublime is felt, and the feeling is overwhelming. Only humans experience the sublime, at least in the classical literature this is the taken for granted position. It may not be true. But this is a human being speaking, not a scientist. Or is it? Arguably, the entire reductive methodology of empirical science, is a cultural device, designed to replace feeling with fact. But overwhelmingly, for this scientist, it is the feeling that counts.

that this is: the statement is emphatic. There are no ifs, buts or qualifications of any kind. In Peri Hypsous, the oldest known text on the sublime, its author states:

> *….but a sublime thought, if happily timed, illumines an entire subject with the vividness of a lightening-flash…….*
>
> (*Longinus: Havel 1894.2)*

…….that this is…..

a spiritual impoverishment of the Earth: note, the spiritual impoverishment is of the Earth. Now this may be a slip of the pen, as it were. Normally we are given to think of spirituality pertaining to the human, but Wadhams is clearly attaching his spirituality to the Earth. The Earth is being considered as far more than its materiality. It has that quality that he calls spiritual: a value, perhaps an ultimate preciousness, that is perceivable by the human, and that quality, whatever it is, can be enriched or impoverished through human effect. Here we are being taken right outside the realm of what we understand as science. The scientist who has spent decades measuring the physical transformations in the Arctic sea ice, is telling us that when it comes down to it, the science can only point to, rather than talk about about what really counts. What really counts is sublime to the science.

Later in this research, interviewees talk to me about what they describe as the de-enchantment of the Earth. This is a phenomenon of present day materialist culture. The Earth has been culturally reduced to a feedstock for the global market, they say, and the ubiquity of the market makes everything available to us, but only for consumption. As far as the market is concerned, the Earth is there to be consumed by us. The suggestion being made by the interviewees is that we might do well to consider stepping beyond our parasitic relationship to our host *(Serres 1982 & 1995.33).* They say, to do that we need to re-enchant the world.

If the transformations going on in the Arctic are spiritually impoverishing the Earth, then the loss is immeasurable to us who are of the Earth, because it is the Earth's loss. The loss spills out, beyond our capacity to comprehend or feel it. It is our loss but it is more than our loss. In its enormity and incomprehensibility, it is sublime.

The loss of the Arctic as sublime, is itself sublime. Its transformation into a shipping lane or oil well presents us with a material gain and an absolute loss. That was the thought that drew me into wanting to examine climate change from the perspective of the sublime. That was the idea that I put to DC in our conversation: to think about the sublime of loss, to think of loss as going beyond what we can take in, to think of the loss of the Arctic polar eco-system as a loss of the sublime that

is itself sublime. The Peter Wadhams line on spiritual impoverishment of the Earth resonates with that idea.

That was the starting point and motivation for this research. Then the project quickly became: is there a general sense in which climate change is sublime? Are there aspects of climate change that sit completely outside of its mainstream discourse, but which, for all that, are overwhelmingly important? And if they are so important, but are missing from the mainstream discourse, what are the implications of the fact that they are missing for climate change policy, and more broadly, what are the implications for how we should be responding to climate change, as individuals and collectively?

In 2010, The Royal Society published a volume of its Philosophical Transactions dedicated to considering a world where global warming had stabilised at around 4 degrees above pre-industrial temperatures *(Royal Society 2010).* The authors argue that despite high level agreements that global warming should be contained within a two degrees 'safe limit', the practical realisation of that policy goal is unlikely, and that a more credible scenario is a warming of around four degrees. The papers consider the implications for sea level rise, water availability, food production, rainfall distribution, extreme weather events, tropical rainforest distribution, forced migration, societal adaptation and the appropriateness of existing international and national laws, finance and policies to meet the predicted challenges. The authors note:

> *Contemplating a world that is 4°C warmer can seem like an exercise in hopelessness: accepting that we will not reduce greenhouse gases enough or in time, and laying out a difficult future for many of the world's people, ecosystems and regions….*
>
> (*ibid. Introduction*)

Much of the content of these papers is taken up with the limits of predicting what such a world would be like, and the need to develop research programmes to make good the shortfall in modelling capacities and so forth. But the issue of our emotional responses, of how we feel or might feel or should feel towards the prospects outlined in the papers, is hardly considered beyond the observation of its seeming, "like an exercise in hopelessness". And yet the whole point of publishing the papers was to kickstart decision making processes that might just forestall the worst of the papers' predictions.

That human decision making does not take place outside of, or uninfluenced by emotional factors is well known. A large academic and professional literature on the emotive content of decision making exists *(see for example: Lerner et al 2014: Bechara et al 2000).* So the questions arise: what are we supposed to feel when we read that under conditions of four degrees of global

warming, the factor of choice, currently playing a key role in the majority of present day human migrations, will, for the large part, no longer be available? And that both the scale and nature of migration patterns would bear next to no resemblance to those of today *(Gemenne 2010)?* If we do not know what to feel, or feel nothing with respect to these predictions, how will this affect our decision making in response to the information we have been given?

This thesis aims to add back in and examine some of the emotional lacuna that tend to be stripped out of mainstream discourse on climate change. My central contention is that the sublimity of climate change, the perception of its being overwhelmingly vast and complex, dictates our emotional responses to it. We are perforce, numbed by what we cannot take in: numbed to the point that we don't even realise we are numbed. Alternatively, when we awaken to its realisation in our lives, the sublime affect unleashes extreme responses: the deepest possible feelings of loss, as the interviewee KE puts it:

> *We do not want to know our planet won't be liveable on. We really don't.*
>
> (*KE interview*)

Or we express absolute denial:

> *The concept of global warming was created by the Chinese to make US manufacturing non-competitive.*
>
> *(President D. J. Trump (tweet) 6th Nov 2012)*

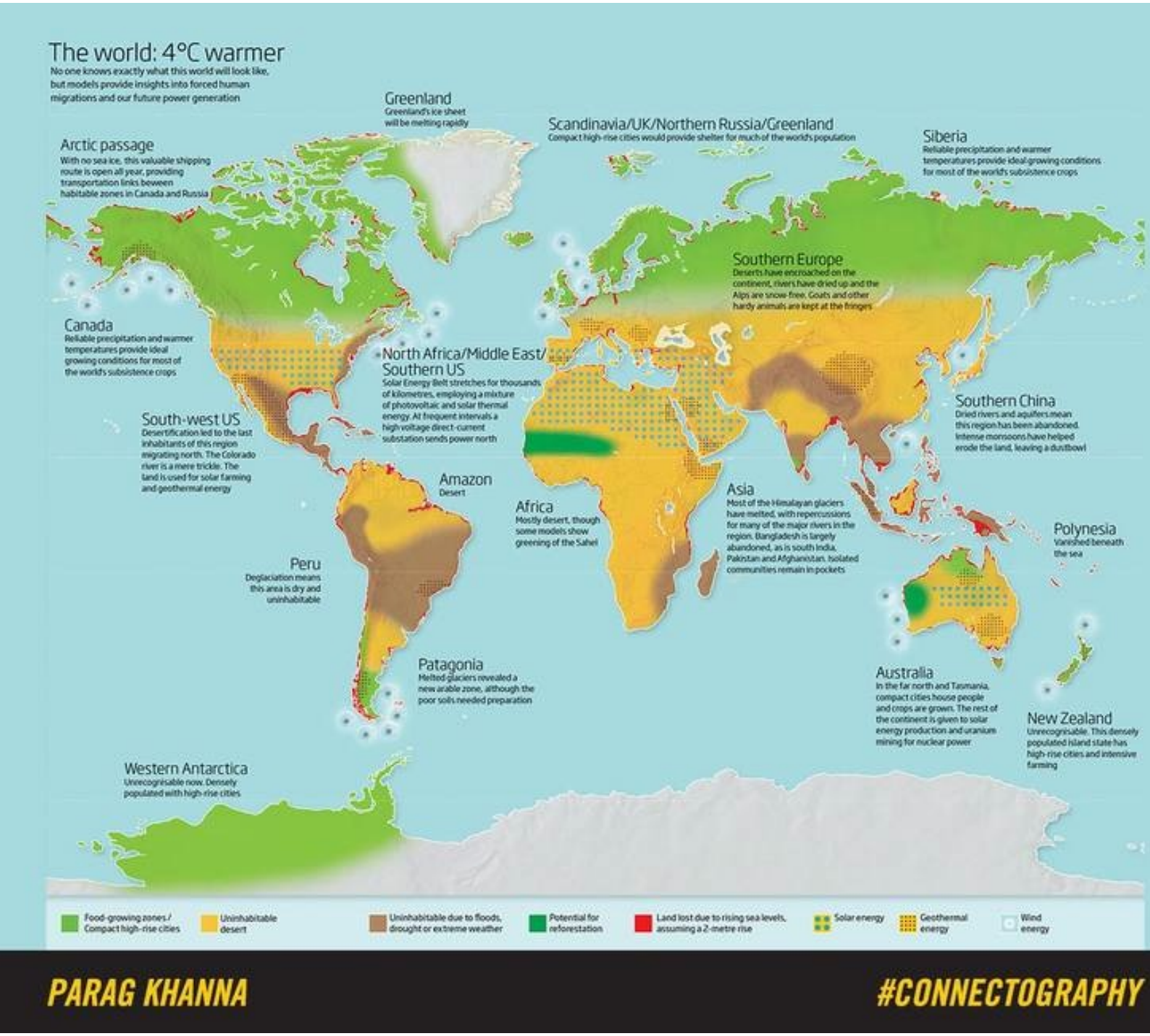
As the lobbyist AR notes:

> *the extremes associated with climate change militate [sic] against reasoned debate.* (*AR interview*)

The map below (originally published by Reed International) gives some indication of the extent and location of land surfaces predicted to be habitable by humans in a world 4 degrees warmer than pre-industrial temperatures. What it depicts begs many questions as to its underlying assumptions, and the means through which the predictions it displays were arrived at. But it is offered here as an example of a published piece of information relating to climate change that we can have some grasp of at an intellectual level, but which leaves us uninformed as to its emotional implications.

The viewer of the map is of course not being invited to engage with it on an emotional level, precisely because the cultural conventions of scientific and analytic writing preclude their inclusion.

It is interesting, therefore, to contemplate, as a thought experiment, how an emotional mapping (*Nold. 2009*) of the same predicted mass dislocation of peoples might be constructed and what it would look like.



(map courtesy of Parag Khanna c. Reed International International Business Information.) https://www.paragkhanna.com/home/2016/3/9/the-world-4-degrees-warmer

The sublime is not a straight forward concept. It has evolved over thousands of years within Western culture, from its origins in classical Greek literature to its present day postmodern and hyper-objective versions. But it remains an aesthetic: an affective way of viewing, beholding or comprehending the world. It is an aesthetic of extremes, and as I have noted above, an aesthetic of the formless. It occurs at the limit of human experience and at the limit of language. Confronted by the sublime, our everyday categorisations of the world fail.

Over its history, the sublime has been regarded in many different ways, but I argue that through all its many assignations, it always alludes to the same aspect of human experience: that which occurs at the point of overload:

> *The sublime, which is concerned with a peripheral and extraordinary aspect of human life, defies attempts at direct specification in language which is structured on the basis of our common agreement in perceptual judgements and simple empirical judgements in everyday situations*
>
> *(Tsang. 1998.36)*

Thus the sublime has been treated as subjective experience, as a property belonging to an object associated with such an experience, as a property of an object possessing the capability of releasing such an experience within its beholder, and as affect. In its present day usage, the sublime is associated with objects that are withdrawn: that is, objects that are not directly apprehensible, but which are nonetheless thought of as possessing almost limitless scale, power and consequence. In this case, we are subject to the sublimity of such objects. It is in this sense that climate change is most clearly sublime. We can experience and possibly predict the effects of climate change, but climate change itself is withdrawn from us as an object of direct apprehension. Such a view of climate change, deeply problematises the idea of mitigating its effects, because there is no clear line between the effects we experience, our responses to those experiences, and their origination in the withdrawn object of the changing climate. In popular culture, the sublime is associated with the apocalyptic and more generally is used in the sense of its being a secularised divine.

The thesis has a simple, if rather unorthodox structure for an academic work. It is modelled on a business presentation, where it is normal practice to provide the main findings and implications of a piece of research immediately after the context and methodology sections. The central analysis containing verbatim extracts from the research follows the presentation of findings (and is often

presented only to technical or departmental specialists) so that the detail can then be mulled over outside of the executive presentation itself. Such a structure is ‘consequence driven” and allows busy executives the opportunity to grasp the central research findings and their implications quickly and then get on with planning or executing business decisions. I adopted this business structure model in an attempt to throw the emphasis of my thesis on to its findings and their implications. This is not to take away from the importance of the theoretical and analytic sections, but simply to use structure to stress that the significance of the thesis, in my view, actually lies in its findings and their implications over and above the novelty of its theoretical approach.

So, following this introduction, in Chapter 2, I discuss my research design and the methods used during the research and analytic phases of the project. The Research Design provides a rationale for the 3 step structure of the research phase, and the overall research method and method of analysis . This is derived from the project’s objectives and central research questions. The Methods section explores issues of reflexivity, interviewee recruitment, interviewing techniques, data analysis and the extraction of findings and implications from the analysis. In Chapter 3, I review the findings and implications from the research phase. These are broken down into findings derived from each of the research phases. Implications are then drawn up with respect to different stakeholder groups. (The same groups are reflected in the composition of the interviewee panels.) In Chapter 4, I review the evolution of the sublime and discuss its different applicabilities to climate change. The discussion begins with a comment on *Peri Hysous*, the first documented account of the sublime available in the historical record, and ends with an account of the sublimity of hyper-objects according to the contemporary philosopher Timothy Morton. En route we pass by Sappho, Kant, Burke, Coleridge, Lyotard, Jameson, Morin, Braidotti and Tsang. The chapter aims to sketch the evolution of the concept of sublimity, identifying key co-ordinates of that evolution. I do not to intend to provide, nor do I claim to provide an exhaustive account of the literature. Chapters 5 and 6 are dedicated to the analyses of the two sets of interviews carried out with academic and other published commentators on climate change,*(Chapter 5)* and with climate scientists, policy makers, policy advisors, NGO principles, lobbyists, and business leaders who are actively engaged in developing climate change science and policy, or are designing and running climate change response initiatives of various kinds *(Chapter 6).* Chapter 7 reviews the overall project and positions it as a grounding for a longer term research programme into the implications of the sublime for specific areas of climate change discourse such as Arctic amplification feedbacks, climate geo-engineering and the geo-politics of forced migration.

The project aims to add significantly to an extant literature that addresses the sublimity of climate change. Notable in this literature is Swingedouw’s discussion of the post- politics of apocalyptic climate change (*Swingedouw 2010*), Kainulainen’s discussion of the ethics of the sublime and the

issue of the unpresentable in climate change (*Kainulainen 2013*), and Clarke's discussion of asymmetries in the relations between the human and the natural *(Clarke 2011).* I am indebted to all three authors for their insights into contemporary perceptions of climate change as sublime. Benjamin Morgan discusses the issue of climate change's sublimity with reference to the changing perceptions of the Arctic (from the romantic to the techno post-modern sublime) and for highlighting the importance of the aesthetics of data presentations in historic and present day perceptions of the Arctic. Morgan (*Morgan 2016*) situates his discussion within the broader debate over climate change's role in dissolving barriers between natural and political history (*Chakrabarty 2009*). Elaine Chong likewise discusses the the dissolution of barriers between extant categories in her *Facing the Sublime: Zombie Figures, Climate Change and the Crisis of Categorisation (Chong 2014)*. Chong uses the zombie metaphor to discuss the collapse of *distinction* on a living dying planet. In her *The Anthropocene and the Sublime*, Katherine Doyle discusses Emilija Skarmlyte's *Manifold* at the Berlin DECAD, in terms of the Anthropocene as a collective imaginary of a planet moving towards destruction. Lisa Bloom reviews the artistic practices of Anne Noble, Connie Samaras and Juliet Hersko, each of whom explore, from a gendered perspective, the shift from a romantic to a post modern sublime as applied to Antarctic exploration and settlement (*Bloom 2016*). Maggie Alt contrasts what she sees as the sublimity of the Papal Encyclical *Laudato Si* with the US Congress funding of the US EPA (*Alt 2016*). Taken together these literatures can be understood as forming a nascent research programme that enquires into the aesthetic, moral and emotional nexus that is the sublime of climate change.

Chapter 2 Research methodology

The chapter is written in three sections. In section 1 I discuss the search for method and meaning. In section 2 I discuss the method of analysis. In section 3 I offer a comment on the limitations of my research design.

The Search for method and meaning

The term methodology is defined as a *system of methods* used in a particular area of study *(New Oxford English Dictionary*). The term *system* suggests a purposeful design of orderly relationships between discrete components that go to make up the whole. Meadows describes a system as "the relationship between structure and behaviour" and as "elements interconnected in such a way that they produce their own patterns of behaviour" (*Meadows (2009. 1-2*). Going further, the term systematic suggests a process carried out according to some kind of a fixed plan: a methodical approach *(New Oxford Dictionary).*

If the approach taken in this research project can be described as systematic, it can only be so in terms of a very open, responsive and adaptive system: indeed a self organising system. As a method, it has been a method in search of itself and at the same time, a search for meaning. The term bricolage comes to mind. But it is not fully clear to me that the processes through which this research has been produced and the thought processes involved therein, constitute a bricolage, as understood, for example by Denzin and Lincoln *(Denzin & Lincoln 2005. 4-6)* or by Rogers (*Rogers 2012. 1-17*).

I describe my method as *a search for method and meaning*. But this does not mean that from the point of view of method, the project began with a blank sheet of paper. Far from it.

In the introduction to this thesis I describe the moment of inspiration that determined that I would set out along this path. This was Peter Wadham's observation that the planet had changed colour at one pole; from white to blue. I then began contemplating the "loss" of the Arctic sublime as itself

sublime. There then arose the question, which is the central research question for this thesis: is climate change sublime?

Very early on in the development of this thesis, I briefly discussed my idea of wanting to research climate change's being sublime, with Professor Gordon MacKerron of SPRU. His comment was: "that is not going to be an easy topic to research". My reply was: "I will find a way". My method of approaching this research project, and the method has not changed throughout the entire project, has been: I will find a way. And along that way, my supervisors have challenged me, almost at every turn, and I am profoundly grateful to them for their constant urging me towards greater analytic clarity: to be clear with myself and with my reader, what it is that I am doing.

But I have concluded that the degree to which this thesis can be analytic is indelibly problematised through my conviction that climate change is sublime, which is so strong. that I cannot, "bracket" *(Merleau-Ponte 1945/1962. xiv in Finlay 2012. 175)* my conviction to the point that I can look dispassionately at the subject and "stand above the world" *(Husserl 1936/1970.152 in Finlay 2012. 177)* in order analyse it.

So, to a degree, this thesis is unavoidably a polemic against climate change as it is depicted within what I call its hegemonic orthodoxy: the depoliticised climate change that is reduced to an atmospheric perturbation and market externality, that is repeatedly referred to, referenced, described and critiqued in the pages that follow.

I determined at first that I had a hypothesis: *that climate change is sublime*, and that my method would be to test it. So the project began life in a deductive mode. What would evidence climate change's being sublime, and what evidence might act as a refutation of that hypothesis? Could I formulate and test the null hypothesis: that climate change is not sublime? What evidence might I use for that? But on closer examination of my research question, it became clear that there was no objective stance that I could take that would allow any such a tests to take place. There were no objective measures to prove the case either way. A determination of sublimity is an aesthetic judgement, according to Kant *(Ginsborg 2014)*, and a synthetic judgement at that (*Robert 2017).* How might such judgements be summed in such a way as to convincingly determine a test of the hypothesis, without abstracting from the issue of the contexts within which such judgements were made? And besides, Kant's view of the sublime as a judgement of taste is not the only rendition of the sublime that I wanted to consider.

If the question: *is climate change sublime* cannot produce a testable hypothesis, then what status can be attributed to it? What does the question mean? Is it a question that can sustain enquiry?

The search for status and meaning led me to undertake a revue of what the sublime has meant to different writers across its long history in Western culture. This review constitutes the fourth chapter of this thesis. It revealed a multi facetted sublime. The sublime is differently characterised across its history and is differently attributed. Such a sublime could, without a doubt be characterised as polyvalent, as possessing the capacity to produce multiple effects. But a far deeper question arose. Are the characterisations and attributions of the sublime sufficiently diverse to warrant consideration of the sublime as polythetic? [1] If the sublime is polyvalent, it could be the case that what was giving rise to these different 'valencies' was a monothetic entity, a singularity of some kind. But if the sublime were polythetic, then no such singularity need be posited *(Needham 1975. 349-369).* Sufficient that there are multiple clusters of attributes and characteristics that need not have common members, but which nonetheless belong to the class *sublime.* Put somewhat differently, is the sublime an empty signifier that has no necessarily fixed contents but which is nonetheless, distinct and purposeful in its own right, through its affective capacities?

The following is indicative of the very many and oft times contradictory attributions that have been conferred upon the sublime across its cultural evolution. The grouping is by no means exhaustive. The attributes can easily be compiled into multiple sub groupings with no common members. This demonstrates polytheticism.

arises spontaneously cannot be directly apprehended is a property of mind
takes place at the extremes of consciousness is of moral consequence
is withdrawn is vast beyond compare is determined from a place of safety
is the extreme of any quality all representations of it fall short is immanent
is a property of nature is a construal when deemed to belong to an object
is a fusion of nature, mind and language is boundless is suffusive is irrefutable
stands in for the divine is co-extensive with finitude occurs where imagination fails
calls forth the super-sensible acts with irresistible force is hyper-objective produces
self-negation produces self realisation is beyond description is transcendent
is unpresentable acts with irresistible force is ubiquitous summons inner freedom

By way of example of the sublime's polytheticism: for Kant, the sublime is is a property of mind, is of moral consequence, occurs where imagination fails and calls forth the super-sensible. For Jameson, the sublime is withdrawn, is immanent, is suffusive, and produces self negation.

But the matter of the polythetic applies even more strongly to the idea of climate change. Under the category climate change, the extent of possible attributions is vast. Here I give an indicative

[1] I am indebted to my supervisor Andy Stirling for drawing my attention to this classification.

sample which could easily be extended and easily opened out to produce increasingly granular attributions.

is cyclical in nature can be traced through the deep history of the Earth is affected by changing land-use patterns is denied is subject to feedbacks interacts with other global systems has geo-political consequences is traceable to anthropogenic causes is irreversible will impact human societies unevenly threatens the UN Sustainable Development Agenda is a bi-product of market capitalism is reversible within limits is caused by increasing concentrations of greenhouse gasses is the responsibility of the rich is subject to a scientific consensus its designation is post-normal is hyper-objective is identified with the apocalypse is mythologised is “glocal” (global and local simultaneously) can be managed by geo-engineering technologies has a safe limit

Needham, recalling Wittgenstein observes:

> *Wittgenstein, ….resorted to the image of a rope (later, in the Philosophical Investigations, a thread) in order to convey the same constitution of a concept: 'the rope consists of fibres, but it does not get its strength from any fibre that runs through it from one end to another, but from the fact that there is a vast number of fibres overlapping' (I958: 87). Among the members of such a class there is a complex network of similarities overlapping and criss-crossing; sometimes overall similarities, sometimes similarities of detail. These features Wittgenstein termed, in a since famous phrase, “family resemblances.”*
>
> (*Needham 1975.350)*

Following the rope metaphor, it becomes clear why, that when I ask the question *is climate change sublime?* the question cannot produce a falsifiable hypothesis. This is the case a) because unless it is made absolutely clear, which strands from which rope are being selected we cannot formulate a rigorous test, and b) but if we did, the selection would be context bound and therefore not applicable to the whole and c) because no selection can be demonstrably representative of the whole anyway.

This analytic understanding has emerged late in the research process. Very early on it had become clear to me that both the sublime and climate change were ‘essentially contested concepts’ (*Gallie 1956.167-198*): they meant different things to different people at different times and in different situations and that any accepted meaning they might enjoy would be the outcome of some form of political contestation. If either had a settled meaning it would almost certainly have been determined by the context of a dominant episteme or truth regime *(Foucault & Gordon 1980.133 in Rogers 2012.11).*

I determined that my research should take this matter of context seriously, and I began to look more closely at ethnographic and phenomenological approaches to its design. But I remained aware that if I committed to a method of inquiry that purported to uncover how climate change figured in my research subjects' constructions of their lifeworlds (*Finlay 2012.180*) (and then sought in analysis to reveal whether or how the sublime figured in those constructions), unless I created a situation that broke with the conventions of how climate change is allowed to be spoken of, what I would get as data would very likely be mired in discursive orthodoxy. In that case, if the sublime was a suppressed attribute of climate change, or more radically, if climate change was an unacknowledged manifestation of the sublime, it would remain suppressed.

A turning point came for me in my literature search of the sublime, when I came to read and ponder Fredrick Jameson's account of postmodernity, where he sees the sublime as withdrawn into the "whole world system of present-day multinational capitalism" (*Jameson 1991.36*) Such a sublime is not directly accessible to us, but is hinted at through the shorthand of its endless technological representations. For both Lyotard and Morton, the sublime is also withdrawn and unpresentable in its fullness. I found the idea that I was already contained within the sublime that I sought to reveal and associate with climate change, totally compelling. This led me to the conclusion that for my research, context was critical in a way I had not previously realised. It was at this point that it became clear to me that I should adopt an approach that aimed to "explicate the world" and draw into the open that:

> *practical understanding in context cannot be reduced to a system of categories defined only in terms of their relations to one another*
>
> (*Rabinow &Sullivan 1987.4*)

which for me meant that if climate change were sublime, its effects would be real for the lives of others, and that some at least would be very aware of this, although perhaps not conceptualising it exactly as I had come to do. I had better be talking in depth to people who were consciously engaged in working with the sublime, in some sense or another, or with climate change, and ideally both. This may strike the reader as an odd process to have gone through, but it was very much the case that through the research process, gradually and iteratively, I felt that I was moving out of the realm of abstract categories (climate change and the sublime) towards concrete realities and their explication.

I came to feel that my research design should, as far as was possible, give me access to the lifeworlds *(Harrington 2006. 341-343)* of research subjects who were deeply engaged with the sublime and/or with climate change. From this realisation it was a short step for me to commit to a process of in-depth one to one dialogues with such people.

Was I now acting as a bricoleur? My approach would fall short of an ethnographic study. There simply was not the time remaining within the period allotted to PhD research at my school, (given that I had used up two years prior to settling on the sublime of climate change as my topic) to devote to the kind of immersion in the life worlds of my subjects that such an approach demanded. The idea of the extended open dialogue or unstructured interview would have to make do. I was *satisficing,* rather than pursuing an ideal. Indeed, I was learning by doing. Rogers notes that Levi Strauss, in his early characterisation of his method as a bricolage, emphasised the bricoluer's use of materials to hand:

> *Levi-Strauss explains, a meaning-making bricoleur is "adept at performing a large number of diverse tasks; but, unlike the engineer, he (sic) does not subordinate each of them to the availability of raw materials and tools conceived and procured for the purpose of the project" (p. 17). For Levi-Strauss, mythical meaning- making bricoleurs combine their imagination with whatever knowledge tools they have at-hand in their repertoire (e.g., ritual, observation, social practices) and with whatever artefacts are available in their given context (i.e., discourses, institutions, and dominant knowledges) to meet diverse knowledge-production tasks.*
>
> *(Rogers 2012. 3)*

My resort to the use of the extended interview should be understood as my using what was to hand, rather than treating the interview method as specifically designed into a systematic pre-planned structure.

I am very aware of the power of silence. I am also very aware of the power of noise. Morin emphasises the importance of taking account of both system and noise: complexity, he argues, emerges from the relationship between order, disorder and organisation *(Morin 2008. 41).* Organisation can be characterised as the ordering of disorderly phenomena subjected to the disordering of orderly phenomena. Seen this way, life as complexity is necessarily a dynamic struggle between order and disorder and this sums up my method very accurately. Morin also says the "method is in the research" and that "recognising complexity means accepting contradiction" and that we "cannot mask contradiction with euphoric visions of the world" (*ibid. 42).* All this is to say that I have come to understand my research as alive, (as if it could be otherwise!) and therefore subject to the vagaries of complexity in the way that Morin describes. There is a consequence to this. It is that what my research has produced by way of its findings is inevitably an artefact of my method and that the two, method and findings, are inextricably tied together. This runs contrary to the idea that somehow, my findings should be independent of the method of their production. It is clear that the bias of method cannot be escaped.

But to return to the matter of the power of silence. In previous (non academic) projects where I had interviewed people, I had learned that by 'letting the camera run"; in other words, if left to themselves to say what they liked, interviewees would eventually come round to revealing to themselves (on camera) what they really thought, one would get far better material for one's film, than if one subjected them to intensive questioning.

I determined that in my interviews, I would adopt, as closely as I could, the same approach and that I would design my interviews exactly with the aim of allowing space for self discovery to occur within the interview, both for myself as interviewer and for my interviewees.

It was then a matter of doing what I could to create a space where meaning could unfold during the interviews, in a way that was not restricted by discursive orthodoxy. To achieve that, I set my invitations to my list of research candidates within the framing of *science and the sublime.* The invitation, sent to writers and commentators on both the sublime and climate change and later to climate scientists, policy makers, lobbyists, business and NGO leaders, was to take part in an open ended discussion on climate change couched within the framing: *science and the sublime*. *(See appendix for a copy of the invitation text.)*

I hoped that free form disclosure might reveal a sublime influence or a concern for the sublime in relation to the interviewees' views of climate change. Or that they might just alight upon the sublime in a process of self discovery, because the interview frame had been set to encourage speculation. Either way, it was important to me that interviewees could situate their expressed views on climate change within their own lifeworlds. This was my nod to ethnography from within my bricolage.

Right up till the time interviewing took place, I remained sceptical about my own approach. It seemed to me that what I had was an uncomfortable compromise between an ethnographic approach of allowing my interviewees to reveal how they constructed the meanings that they placed on the notion of climate change and my insistence that they do so with reference to the sublime. The aim and the method didn't seem to fit. My improvised solution was to put the explicit framing into the interview invitation, but then not refer to it during the interview, but rather to encourage interviewees to talk about how they saw climate change, in any way they wished.

I also decided to carry out the interviews in two tranches. The first tranche would act as a test or proof of concept, most especially for my method, but also to see what the interviews produced in terms of material that could be linked to the sublime.

In deciding to carry out two tranches of interviews, it then occurred to me that i could split my respondents into two groups, one made up of commentators and writers on climate change and on the sublime and the other to be made up of climate scientists, business and NGO leaders and policy makers who were actively engaged in developing the climate agenda. So I would have two groups, one who were looking at climate change from some distance away and the other who were more immediately involved. Given that the sublime is an aesthetic, would it present itself in different ways for these two groups, if indeed it would present itself at all? *(See appendix for snap-shot details of the anonymised interviewees)*

In all, I conducted twenty two face to face interviews divided into two groups of six and sixteen interviews.

For the initial test, I chose to target academics and writers who had published commentaries on either the sublime, or on climate change, or on both. The initial test consisted of six one hour interviews, following the unstructured interview model. Importantly, for this first tranche of interviews, the framing was set to allow interviewees to engage specifically with the sublime as an aspect of climate change, if they saw fit to do so, or not to engage. The objective was to discover if they would, given the space, freedom, legitimacy and encouragement, to do so, or if they would not. And of course if they did, then the point of the interview became how they made use of the sublime in structuring their vision of climate change. If an interviewee did not engage with the sublime, then the interview still sought to understand how that interviewee built up their perception of climate change.

In the outcome, the first group of interviews produced a sufficiently rich haul of sublime related commentary on climate change that I felt confident in approaching the second, and to me, quite distinct target group but now with a slightly different aim in mind. For this second cast of the net, as it were, my aim shifted from trying to establish credibility for the idea of climate change's sublimity, to assuming there was a sublime dimension to climate change, and inviting these senior figures from the climate change science policy world to explore with me, what the features and implications of climate change's sublimity might be.

This drift in aim, from the first to the second sets of interviews was not pre-meditated. By this time I felt that I was deeply immersed in an iterative process, where improvisation (*Cerawonka & Malkki 2007*) during the actual interviews had played a strong part in achieving free flowing dialogue, and I no longer felt bound by my earlier determination to be "hands off" with respect to the subject of the sublime.

Below, I discuss specific issues relating to the interview process before turning to a discussion of my multi level thematic analysis.

Context

The importance of context to social scientific inquiry has long been recognised. As an activity of reflecting the human world of which it is a part, any social scientific inquiry is bound by the context in which it takes place. It cannot stand entirely outside of the world it seeks to understand. Rabinow and Sullivan make the point:

> *Interpretive social science seeks to replace the standing distinction between the social sciences as descriptive disciplines, and the humanities as normative studies with the realisation that all human inquiry is necessarily engaged in understanding the human world from within a specific situation…….it means that science, like all human endeavours, is rooted in a context of meaning which is itself a social reality….*
>
> *(Rabinow &Sullivan 1979. 21*)

As noted above, two sets of unstructured interviews were carried out for this research. The first tranche of interviews were held across November and December 2016, during the very early days of the Trump Presidency and the continuing hiatus of the UK's impending departure from the European Union. The war in Syria had reached new levels of ferocity, with daily news reports from Aleppo adding to a pervasive air of dismay and foreboding that is clearly reflected in these discussions. The second tranche of interviews were conducted in January and February 2017, by which time the fate of Aleppo seemed to be sealed, and the shock waves of the Trump election seemed to be subsiding. During the interpretive and analytic phases, following the interviews, the context has continued to exercise its influence, as one repeatedly refers to it, almost involuntarily, when considering specific meanings of passages from the interview transcripts and of course when it comes to assessing the overall findings from the research and their implications.

With respect to climate change, the context continues on, as a gathering concern over lost opportunities to address climate change. This was a clearly voiced concern for the climate scientists I interviewed. The Paris Accord, although regarded as an important event in terms of achieving international alignment around the acceptance of anthropogenic climate change and the IPCC's 2 degree global warming "safe limit", was also interpreted by many interviewees as having left the door open for individual states to fail to deliver on their commitments to decarbonisation. That the IPCC's lower level predictions for future greenhouse gas emissions, (which might see the

world meet the UNFCCC's aim of avoiding "dangerous anthropogenic climate change") are heavily dependent on the delivery of *negative emissions* during the second half of this century, was also seen by the interviewees as cause for concern. This was because the means of achieving such emissions reductions at the global scale do not currently exist. Thus the achievement of the IPCC's critical goal remains in the realm of wishful thinking. And the election of Trump (and the subsequently stated intention to withdraw the US from its Paris Accord commitments) continues to cast a shadow over the US's commitment to international efforts to come to terms with global climate change.

But the context also remains one of climate change being politically overshadowed by more pressing issues such as austerity and its effects (here in the UK, the Grenfell Tower fire has thrown this into acute relief (*Guardian June 28th 2017*)); domestic security concerns exemplified by events in Manchester, London and Barcelona; geo-political instability, with North Korea and the US seeming to eye one another up for a fight; and more generally, a sense of breakdown in the post Second World War political and economic settlements in which the affluent classes of the Western liberal democracies have enjoyed the fruits of hegemonic power. All this seemed to be unravelling at the time the interviews took place and during the follow up phase. All the while the sense of undoing of the familiar was being further propelled by a background sense of an imminent tidal wave of change, fuelled by emerging AI technologies.

One interviewee described the context of our meeting in terms of a sense of a gathering storm: a storm that was felt to be one whose nature will be to spill over, outside of whatever bounds might initially contain it. I am reminded here of Kant's mathematical sublime and Jameson's suffusive sublime of post modernity. The rationale for that sublimity of context must surely be the hitherto unprecedented interconnectivity and interdependencies of the global world.

Privacy

It was important to conduct the interviews in private and face to face, wherever possible. This was widely achieved for interviews conducted in the UK, but for interviewees from the US, Skype was the main medium through which we communicated. Four interviews were conducted as telephone conversations. All interviews were recorded and conducted under "Chatham House Rules" - I would be allowed to quote directly from the transcripts, but identities of the interviewees would be protected.

Dialogue

My aim was to conduct the interviews as dialogues around the theme of *the science and sublime of climate change* and to keep as far away from a question and answer format as possible. The aim was ambitious, given that the expectation of many interviewees was that they would be being questioned. The dialogue flowed more freely during face to face interviews, than those interviews that were mediated by either Skype or phone, where the conversations tended to revert towards question and answer. This was an important learning point for me; that when trying to engage interviewees on the level of sensitivities towards climate change that might normally be kept quite private, I needed to be there in person. One technique that I did use, that seemed to prove quite effective, was on occasion, to be open and frank with an interviewee about my own sensitivities regarding climate change. The hope was that my openness would then serve as a cue to the interviewee that it really was fine for them to open up too. But not all would do so, in my estimation. All that some were prepared to reveal was a personal position or slant on climate change, which might be quite idiosyncratic, but which came across to me as nonetheless somewhat guarded.

Improvisation

My occasional revealing of my own sensitivities in an interview situation should not be understood as my lapsing into an unwarranted subjectivity that might adversely colour the enterprise I was engaged in. It is better thought of as an act of improvisation - a spontaneous response to an obstacle that seemed to be standing in the way of getting through to my interviewee, in order to elicit a deeper response.

One of my interviews was with a Bishop of the Church of England, whose responses to my probing his views on climate change were always of a nature that struck me as unduly pessimistic, bordering on the defeatist. While it was very clear to me, during the interview, that the perspective being rolled out before me was an important one that I should accept and certainly take note of, I also felt it was one that I needed to break open. I suddenly switched tack towards the end of the interview, and addressed my interviewee, not as a subject of my researching into climate change, but as a ‘man of the cloth’. I told him that I had found what he had told me, deeply disturbing and asked him how I might find peace in such a world as he had described. This elicited an equally sudden change in him; his entire demeanour changed as he explained to me his Christian vision. It suddenly became clear, almost as though a light had been switched on in our interview room, that it was this vision that actually informed his view of climate change, and not the particular brand of market economics that he had been previously offering me. At that point I closed the interview.

The foregoing is an example of what the hermeneutist Gadamer, would term a change of positionality or horizon by the interviewer. (*Cerewonka & Malkki 2007. 31*) This is done in order to gain new insight into an object that seems to resist interpretation. Resisting the idea of “absolute objects” or “the world unto itself” Gadamer has argued that the understanding of an object is shaped by its relationship to other objects *(ibid*). In the above case, climate change was being explicated through its relationship to neoliberal economics. Then suddenly, by virtue of a shift in horizon, it was being understood in terms of a Christian vision.

At their best, these interviews can be thought of as improvisations aimed at explicating different views of climate change from within a context of immanent sublimity (see above). Of course, to some degree, the sublimity of the context would be transferred onto the object of inquiry, but equally, it was felt and expressed by several interviewees, that the subject and nature of the interviews themselves were absolutely right for their time. Perhaps this goes some way to explaining the extraordinarily high response rate that the invitations to take part in the project realised.

Method of analysis

My concern shifted to how to analyse what had been revealed to me during the interviews. By now, I felt a great obligation to honour the frankness of the disclosures that had been made to me and in particular to honour the individuality of these revelations, some of which I had found deeply affective. But then this was what I had come for. I wanted, above all, to allow a space for feeling to be expressed, as well as intellectual insight to be revealed.

I decided to pursue a multi-level analysis. I would conduct two thematic analyses on the two sets of interviews, but in addition I would conduct an individual narrative analysis on each of the interviews of the first tranche. The aim was now to be able to compare findings across the two sets of interviews, albeit that they had been framed differently, and to compare what individual narrative analysis revealed with respect to climate change and the sublime compared to group analysis.

My hope was that by imposing much more of a formal structure during the analytic phase of my research, this would have the effect of balancing out the possibly severe pitfalls of the open dialogue method of the interviews. Subjecting the raw flows of expression from the interviews to the multi level thematic analysis, seemed to me to be a reasonable enactment of Morin’s idea of working with both order and disorder to produce some kind of organised meaning. There was also

a clear parallel here for me between subjecting my interview data to rigorous analysis and the ruthlessness of the edit suite in film making.

Each interview had been audio recorded, and these recordings were now transcribed. The two sets of interview transcriptions would be separately analysed before being compared. The transcriptions from each set of interviews were then loaded into NVivo, a qualitative data analysis tool, so that they could be individually coded against themes that emerged out of the data. Note: the themes were not pre-determined, other than through the initial framing of the interview conversations which were set up with reference to *climate change and the sublime*. The transcript excerpts from the different interviews belonging to each theme, were then grouped together for analysis. A second grouping identified the themes that belonged to each interviewee's individual transcript, so that a comparison could be made between a thematic analysis at group level and an analysis at the individual level. So to be clear, the research design allowed for a thematic analysis to be conducted at group and at individual level and for a comparison of the results of the analyses between the two sets of interviews. This element of triangulation and cross referencing built into the design, served to strengthen the confidence that could be assigned to findings emerging from the data analysis.

As discussed above, the research design evolved to capture as wide a range of findings that might bear on the sublime as possible. As can be seen from the two thematic maps below, both sets of interviews produced wide ranging and diverse responses, whose connections to the polythetic sublime are multiple and complex.

To produce findings that related more directly to the research questions, the next stage of the design consisted of editing out tangential or marginally relevant themes and their associated texts. For the first tranche of interviews, this edit was much less stringent than for the second set of interviews. This distinction in editing styles is consistent with the different aims associated with each tranche of interviews. In the first case I wanted to find evidence of the sublime within the interviewees' expressions of their views on climate change. In the second, I wanted to determine what the interviewees made of climate change's sublimity. This then produced two sets of findings that could be compared for how they bore directly onto the research question: *is climate change sublime* and its subsidiary questions.

Implications from the findings for different interest or stakeholder groups were drawn up based partly on observations made during the interview process and partly on my own reading around the subject of climate change and climate change policy and past personal experience of working within environmental NGOs. To round out the design, the same groups that are represented within

the interviewee recruitment phase: climate scientists, policy makers, NGO and business leaders, local communities and individuals, have the implications from the research addressed to them.

Bias in interpreting the interviews.

The foregoing should have made clear that both context and bias are 'allowed' into my interpretation of the interview material. I have discussed matters of context above. Here I discuss the issue of bias. I have referred to the inevitability of method biasing findings above. Rabinow and Sullivan also make the point of bias's inevitable presence within social inquiry:

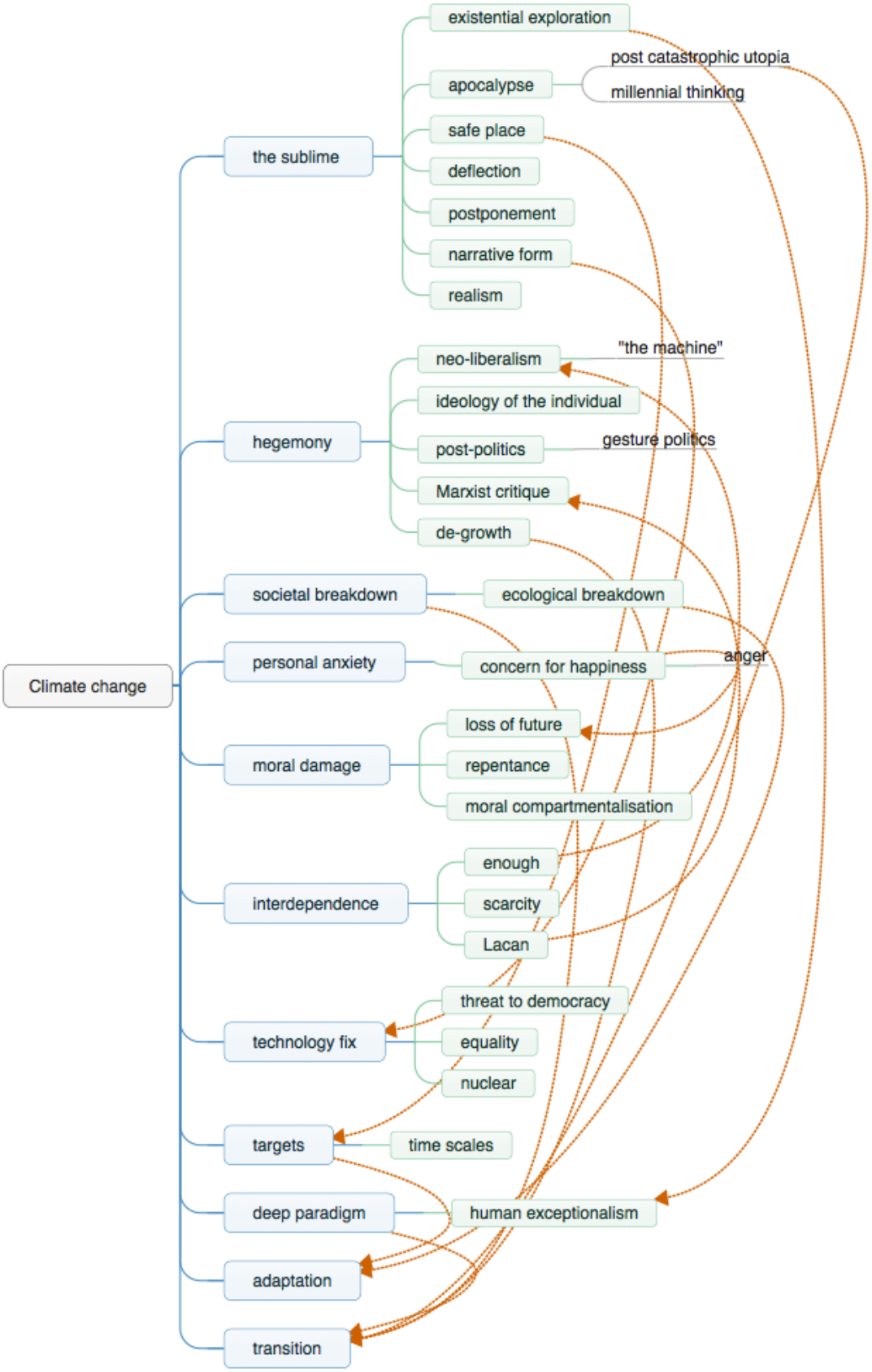
> *Our capacity to understand is rooted in our own self definitions, hence in what we are. We are fundamentally self interpreting and self defining, living always in a cultural environment inside a "web of signification we ourselves have spun". There is no outside detached standpoint from which we gather and present brute data. When we try to understand the cultural world, we are dealing with interpretations and interpretations of interpretations.*
>
> (*Rabinow & Sullivan 1979.7*)

By bias I here, mean to draw attention to my own role as interlocutor in the dialogues and my own predilection towards the sublime as a vehicle for understanding *the anthropogenic* of climate change. Were it not the case that I interpret the mainstream discourse on climate change as largely captured by managerial and technical debates in response to the agreed or claimed to be "settled" science of climate change, this project would never have arisen in the form it has.

What I have done to respond to the issue of bias is, while accepting its inevitable presence to a degree, I have allowed the project to evolve in such a way that the bias is kept in its place, meaning kept to a minimum. The triangulation built into the research design is very much there to help compensate for bias. And my approach to interviewing, of allowing each interview to be very largely shaped by the interviewee's interests, biases and predilections, and of adopting as non judgemental a stance as I could when acting as interlocutor; these are all attempts to recognise and deal with the potential for bias to dominate the project and endanger its veracity as a piece of social science research.

An interpretive approach

I am not trying to determine a law of causation that positions the sublime in relationship to climate change. What I am trying to do is explicate whatever relationships there are, or might be deemed to exist between the two in order to expose their effects and implications.



Thematic map: First tranche interviews

the aim is not to uncover universals or laws but rather to explicate context and world.

(*ibid.14*)

To clarify and explicate the relationship: both the sublime and climate change may be considered as polythetic categories. The sublime may be taken as belonging to a certain aspect of climate change, such that the experience of or an encounter with that aspect would trigger an experience of the sublime in the observer. Or climate change may be thought of as suffused by the sublime. In

Thematic map 1st tranche interviews

this case, climate change's sublimity would in all cases be somehow present, either latently or openly in all encounters with climate change. These are different interpretations that may be put upon the the core notion that climate change is sublime. The search would then be to uncover which aspects of climate change may be considered sublime, and in what ways and with what consequences might we think of or experience climate change as suffused by the sublime.

So, for example, climate change viewed as apocalyptic is an aspect of climate change that may be taken as sublime, the apocalyptic and the sublime being close neighbours, as it were. That climate change is suffused by the sublime is indicated through climate change's withdrawn nature. We never actually get to experience climate change itself, only its local manifestations. Or that we as members of an Earth species inhabit climate change as well as contribute to it, further explicates climate change's sublimity, this time in terms of its power over us.

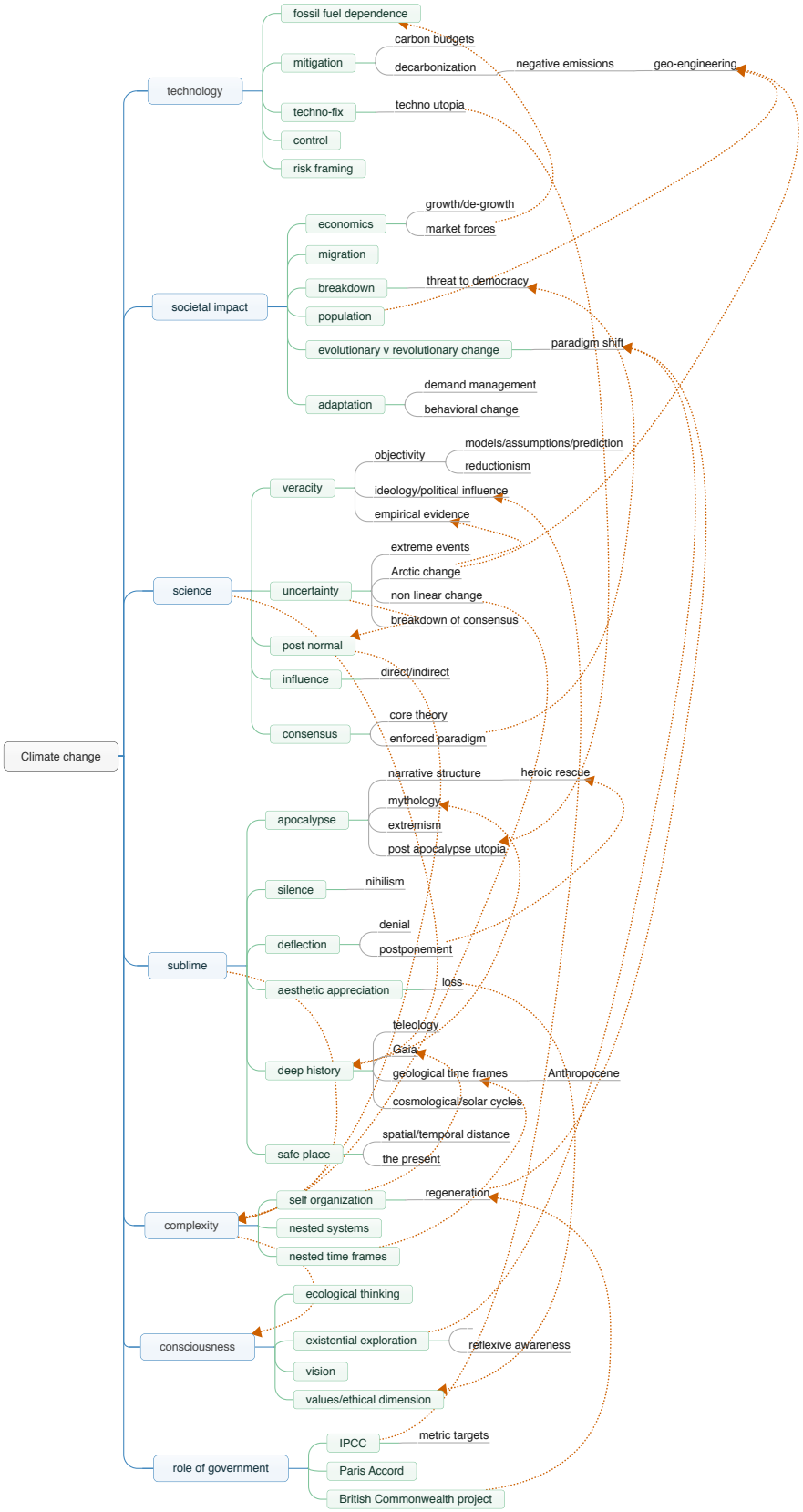
This latter point brings us back to the issue with which I opened this discussion of design and method, that of the sublime being an aesthetic of formlessness. To the extent that climate change is formless: that is, that it persists outside of its many, many discursive reductions to, for example, the formulae of atmospheric chemistry or the physics of black body radiation, or the policy prescriptions of the IPCC, or is the subject of experiments in geo-engineering, or is regarded as a manifestation of market failure, or is thought to be calling time on human economic expansionism within the boundaries of planetary tolerance, and so on, climate change is sublime to human consciousness. That means that it cannot be captured in a method, or surrounded by a design framework. The closest we can come to subjecting climate change's sublimity to human scrutiny is to choose a design and a research method that allows room for the maximum openness towards what might count as permissible evidence, including expressions of intuition and above all feeling. These should be allowed to co-exist alongside whatever empirical evidence can be gathered as to its effects, and for the maximum openness in the way that evidence can be interpreted. The

sublime of climate change is not going to be pinned down. But it can be admitted, and the nature of its admittance and the implications that might flow from it, can be interpreted and given voice to.

Thematic analysis

In the analysis of the interview transcripts, I gather together under different themes, those remarks and observations made by the interviewees that seem to me to belong together, in that they refer to the same aspect of climate change or they provide evidence of the very different ways in which the interviewees come to regard a phenomenon. Take for example the ideas of risk and predictability. To reduce climate change to a risk framing is seen by some interviewees as a least worst option, given that risk analysis as a prelude to decision taking in the face of uncertainty is well established in other fields of environmental management. To others, such a reduction, is almost to commit a category error, because in that process of reduction of climate change to risk, its very irreducibility, which distinguishes climate change from other environmental issues, is, transgressed. Risk might apply to the likelihood of the occurrence of a particular manifestation of climate change, say in the form of a storm surge, but it cannot be applied to climate change itself.

In my gathering together of interview extracts, both these views would be assigned to the theme entitled *risk*. So the themes are not so much semantic fields, where the extracts assigned to them share a common meaning or vision, rather they are sites of common concern, where very different and often contradictory views can be assembled because they share the same or a broadly similar focus.



Thematic map 2nd tranche interviews

The thematic analysis carried out on both sets of interviews is shown above in map form. The maps give a graphic sense of how the various themes relate to one another and how they have been prioritised in terms of their structural importance. The maps show the main discursive themes emerging from the interview process and their children, or sub themes. The relationship of theme to sub theme, indicated by straight blue structuring lines, is not a simple hierarchy, as might be thought from a first glance at either map. Main themes both nourish and are fed by their sub themes. There is also a deal of cross feeding or cross fertilisation between themes as can be seen by following the brown elliptical lines. The maps show only the main theme and sub theme headings. Under each are grouped extracts from the various interviews that bear on that theme.

The level of analysis of the transcript texts is quite broad. Texts were coded for sorting into themes in sections, usually a few sentences long, sometimes entire paragraphs in length. Only those sections of a transcript that were interpreted by me as exemplary of a recognisable theme, were coded. This means that the analysis is *not* a full content analysis. As previously noted, the themes are grounded in the texts themselves. There were no pre-assigned themes other than those of *climate change* and *the sublime* which were the originating frames by which the interviews were bounded. The prioritisation of themes and sub themes was achieved by counting the number of text extracts that had been assigned to that theme. The more and the longer the extracts, the higher the prioritisation of the theme they belonged to. In the maps themselves, the themes are not arranged in terms of prioritisation other than that of parent child relationship. In the written thematic analyses, chapters: 5 & 6, the prioritisation is made clear.

Group versus individual analysis

The maps show only the group thematic analyses. A further level of analysis was carried out on the first tranche of interviews, at an individual level. This analysis shows a very high degree of narrative variation between the individual interviews. Indeed, this degree of variation was a major finding of the interview process. Given that interviewees were freely encouraged to offer whatever perspective on climate change they chose, this should perhaps not be surprising. But what emerged was that in every case, the individual interviewee situated their version of climate change within a pre-conceived world view, so that the two were aligned. This was a second significant finding of this research phase and justified close attention being paid to the individual level analysis, in addition to that analysis acting as part of the triangulation built into the research design.

The group structuring of climate change perceptions, and indeed the very fact that twenty two different people could be engaged with, privately and individually, on the subject of climate change and the outputs of those engagements be broadly comparable with one another, strongly supports the view that beyond its materiality, climate change is socially constructed as a discursive entity. That it is made out of shared precepts such as global warming theory, knowledge of the idea of a safe limit to the level of anthropogenic greenhouse gas emissions and so on. But what this project also shows is the fragility of that construction. It shows that as soon as an individual engages with the social construction *climate change,* the construction starts to fall apart, or rather that it isn't really a construction at all, but is, rather, a repository of concepts and claims and empirical measurements relating to climate change that can be drawn upon to allow the individual to construct their own unique version of climate change. What we have here, are twenty two versions of what climate change means, each acting as an interpretation of what climate change is, in its materiality. And by common admission, none of these constructions is in any way complete. They are limited by their adequacy to fit into the individual's pre-existing world view. Each element selected from the repository is interpreted accordingly. Elements that have no chance of fitting into the individual's world view are simply not selected.

A comparison between the two sets of interviews and between the group and individual levels of analysis rounds out the thematic analysis. Findings from these analyses and their implications are presented in Chapter 3.

The analytic narrative.

The analytic narrative is drawn out of the thematic analysis. It tells the story of how the sublime features, among other key themes, in the interviewees' constructions of their perceptions of climate change. The thematic analysis itself, as can be seen from the maps, produces a complex picture of how the interviewees, when considered together, construct their perceptions of climate change, overall. Such a complex picture was deemed unmanageable in terms of producing a coherent analytic narrative that responded directly to the research question, and so a second tier analysis was performed. In this second tier, only a very tight selection of themes makes the cut, and these are the themes that are explored in detail in the relevant chapters.

The selected themes are those that bear directly or most closely on the sublime, or are so dominant within the overall set of themes, in terms of their prioritisation, that not to include them in the final selection of themes would be to grossly misinterpret the data that had been collected. The

best example of this is the attention paid to the themes *hegemony* and *societal breakdown* that are so important to understanding how perceptions of climate change are built up by the first tranche of interviewees.

The choice of analytic narrative was of course determined by the overall project aim, which was to offer an explication of how the sublime features within the interviewees constructions of climate change, and with what implications. The narrative belonging to the analysis of each of the two sets of interviews was determined by the objective for that part of the project. So for the analysis of the first tranche of interviews, the narrative is one of discovering how the sublime plays within an overall view of how those interviewees built their perceptions of climate change. For the analysis of second tranche of interviews, the narrative is focussed on how different conceptions of the sublime can be evidenced from within this set of interviews.

The writing of the analytic narrative can also be thought of as a central point of discovery within the overall project. Above, I have noted the need to address the issue of formlessness in considering the sublime and the need to somehow take on or open up to that formlessness within the overall design of the project. One way doing this was to treat the sublime itself as an evolving entity whose meaning and place within culture changes over time. A second way was to determine on an unstructured interview design. A third way was to be open in respect of what was allowed to count as evidence for the analysis. And a fourth way is to allow discovery to unfold during the writing of the analytic narrative. In this approach, writing is not treated as a filling in of detail between predetermined markers that have already defined the path the narrative will take. Rather in this more open form, a general direction is set by the needs of the project at any one point, and one then embarks on a journey, not really knowing what one will take in along the way, or what one will encounter. The writing comes to a certain point along the road, and the pertinence of a very specific quote to that point, suddenly springs to mind. In this way both method and research merge, their relationship to one another is fluid and comes closer to approximating the formlessness of the sublime, while not claiming to be performative.

Reading as method.

How the text should be read is not normally counted as part of the design of a project. But in this case some pointers are relevant. By attempting to articulate the sublime of climate change, the project aims to open new ground. It is clearly for the reader to determine whether that ground has merit or not, but a word of caution on approaching it may not go amiss. The sublime is not easy to talk about. Tsang says the sublime occurs at the limit of language:

> *The sublime, which is concerned with a peripheral and extraordinary aspect of human life, defies attempts at direct specification in language which is structured on the basis of our common agreement in perceptual judgements and simple empirical judgements in everyday situations…There seems to be a fundamental reason for our failure to represent directly the sublime. If the limit to our life, or our life at the limit lies outside the possibility of (everyday) consciousness, then it lies outside of speech. "What lies outside of consciousness, lies outside of speech, or lies cryptically, fictively, irrecoverably inscribed within a language that both is and is not our own" (Morris.D.(1985) Gothic Sublimity.New Literary History Vol 16. 299-319)*
>
> *(Tsang. 1998.36)*

One needs to hold this thought, as they say, while moving through the text. The reader will find that as we encircle the sublime, or at least try to, we never alight upon it. That is in the nature of the thing. So one has , in a sense to suspend one's judgement as a mode of reading, even as one judges the merit of the argument being put forward. And a second point of openness in the reading is also required.

The interviews were set up to encourage full disclosure of the interviewees perceptions of climate change or their thoughts on or their feelings towards climate change's sublimity. When selecting extracts from the interviews to appear within this text, I make no judgement on the truthfulness or any other aspect of what was being disclosed, other than that it seemed to me to exemplify that individual's view of the particular aspect of climate change or the sublime that the quote referred to. The reader may want to take issue with what is being stated in a particular quote, or wonder why I, as analyst have not done so. But this is beside the point. If interviewee x states total gibberish in defence of their view of climate change, then so be it. It is not part of this project to pronounce on other's perceptions of climate change, other than to discern how those perceptions, regardless of what they are, bear on the interviewee's perception of climate change as sublime. The text should, of course be judged on how i make use of the extracts that I select in building an analytic narrative to support my research aim.

A note on reflexivity

Integral to my research for this project and taking a place of parallel importance to my literature searches, interviewing, data analysis and discussions with supervisors have been practices aimed at opening my awareness of my own human presence in the world and the nature of that presence. Across the duration of this study, and preceding it by many years, I have observed a daily practice of silent meditation, tai chi, and qi gong. These practices are directly relevant to the study of the sublime. So for example, the practice of inner silence gives rise to an appreciation of the formlessness of one's inner being that is immanent to ones consciousness at the level of language. The practice of tai chi opens one's senses to one's surroundings in such a fashion as to dissolve the every day distinctions that normally persist between self and other. These practices give rise to a sense of being in the world and of the being of the world that are not captured or recognised in everyday language. Yet it *feels* as if such a sense of being has immense importance at a species level, for humanity as a whole. Whether or not it has, outside of its *feeling* that it has, is another matter, but one of the aims of this study is to try to assert the suppressed importance of feeling in contemplating the significance of climate change and our responses to it.

In her discussion of the phenomenological approach to research, Finlay tells us that phenomenology is a "way of *seeing* how things appear to us through experience" (*Finlay 2012. 173). She also says that:*

> *Phenomenological researchers generally agree that our central concern is to return to embodied, experiential meanings of the world directly experienced. We strive for fresh, complex, rich description of phenomena as concretely lived. We ask, "What is this kind of experience like?" "How does the lived world present itself to me?"*
>
> (*ibid)*

There is no question that to some degree, my own lifeworld has influenced this project. Indeed the focus on lifeworld has been an important part of its methodology. Nonetheless I have sought to favour the perspectives of my interviewees over my own. This determination by me to keep out of the way as much as possible has run right through the whole research process, while at the same time I have recognised that:

> *One learns to know only what one loves, and the deeper and fuller the knowledge is to be, the more powerful and vivid must be . . . the passion".*
>
> *(Biswanger 1963.83 in Finlay 2012.175)*

Design limitations

In this section I offer a short discussion on the limitations of my design process.

I have brought forward the idea of the sublime as polythetic and suggested that this particular interpretation of the sublime allows it to work effectively as an analytical device that can be used to reveal many of the aspects of climate change discourse, which extend beyond the confines of its official interpretations. One key matter of design limitation arises with respect to the degree to which my approach to data gathering and analysis has been able to embrace the very nature of this polythetic sublime. When we take account of the fact that in one respect, the sublime can be considered as a synthetic judgement and treated as essentially "self regarding" (*Brady 2013. 69*) and in another respect it can be understood as the property of an object, in which case it is most certainly "other regarding" (*ibid. 79*), and when in one breath we consider the sublime as direct experience, and in the next as concept, it becomes very clear that as a semantic platform, the sublime offers little by way of consistency or stability. We use the same word in very different ways to mean very different things. This slipperiness or fuzziness at the heart of the analysis, where the sublime, by definition, is continually escaping, necessarily imposes a limitation on any research design that would employ the sublime as its central motif. The design must allow for disorder, indeed more than allow, it must accept disorder as integral.

Following from this, one is faced with the corollary that where the research design is limited through its admission of disorder, its findings must be constrained by uncertainty, and an uncertainty that is not necessarily measurable. So how far out might we be? Actually we cannot know. And this goes right to the heart of the thesis: that when we admit the sublime we admit the unknowable. The very best we can do is be open to being taken by surprise by what we find, and in anticipation of surprise, put flexibility before optimisation as a design principle. (LB, in the interview extract on pg. 145 makes a parallel point with regard to the design of policy aimed at adapting to and mitigating the effects of climate change.)

The open dialogue form adopted in this design does just that, but it comes at a price. The quality of the findings will be subject to a radical contingency, to the extent that the researcher sits back and allows the interviewee the space to self discover during the interview: the researcher neither particularly challenging the content nor steering the direction of the interviewee's disclosures.

The reader will discover that the method produces highly individualistic interpretations of climate change (see the section: The limits of thematic analysis: individual narrative reconstructions on pgs.125-131 below) We need to bear in mind that these individualistic accounts are arguably closer to the the source material - the interview transcripts - than the thematic analyses that form the main body of interpretation in this thesis. In this sense they are closer to the ground, and more genuine, and act as a cautionary to treating the findings of the thematic analyses as central and dominant.

Further limitation: in my research design, the individual narratives serve to triangulate the main findings from the thematic analysis. However, at best, this triangulation can only act as a proxy for a "proper" social view of climate change and the sublime. A richer social analysis could have been achieved, had the research design incorporated one or more group discussions featuring the same research subjects who took part in the individual interviews. The point here would have been to discover how individual perspectives would play out in public: which aspects would be foregrounded and could, through negotiation, contribute towards a collective view on climate change and the sublime, and which aspects would remain repressed but nonetheless be working in the background to undermine any consensus that might otherwise emerge from within the group. A comparison between the collective themes emerging from group discussion with those produced through the thematic analysis of the individual interviews, would, in principle, produce a richer and more robust set of findings than has been produced following the method I have used, which relies exclusively on individual narratives to triangulate my thematic analysis. Time constraints ruled out the possibility of conducting a group analysis and a comparison of its findings with those of the thematic analysis based on individual interviews.

And it has to be said that even obtaining feedback from individual contributors on the provisional findings from the thematic analysis would have strengthened the analysis, but again, time constraints foreclosed on this option.

As a closing comment on design limitations, issues of interpretation should be addressed. My interpretation of what my sources have told me is based on my personal predilections as well as the reading and research that I have carried out over the years on climate change and the sublime. So we have interpretation (mine) layered upon interpretation (the interviewees'). The validity of what I have found rests heavily upon the integrity and reputation of my sources and my own efforts not to misinterpret what they have told me.

Each of the above limitations serves to make clear the areas where the analysis and its method of approach could have been strengthened. Nonetheless, the overall research design, with its deliberate juxtaposing of formal analysis with informal content has produced a rich vein of findings. These serve to emphasise the importance of opening up the discourse on climate change to allow access for marginalised perspectives. The sublime, perhaps the very antithesis of of the notion of manageability, provides us with a wonderful tool through which these neglected discourses can be addressed.

Chapter 3 Findings and implications.

Introduction

In this chapter I discuss the findings drawn from my review of the evolution of the concept of sublimity and how it can be and has been applied to present day climate change, and from my analyses of the two sets of interviews carried out for this project. I then turn to the implications of the findings. I discuss these implications with respect to different interest groups: scientists, policy makers, advocacy groups, business, communities and individuals.

The findings emerge from my review of the theory of the sublime and from the analysis of interview materials. The implications are based on my assessments of the relevance of the findings for the different interest groups. The assessments are informed, partly by contributions from interviewees, but also by wide reading around the subject and extensive professional experience working at a senior level amongst major environmental NGOs.

The findings establish the sublime as an important but for the large part neglected vehicle for understanding perceptions of climate change. For the future, the findings and implications of this thesis could be used as part of a basis for developing a research programme dedicated to exploring the sublimity of different aspects of climate change discourse, such as the discourse on Arctic Amplification and the discourse on climate geo-engineering. Such a programme would feed into and support other counter hegemonic accounts of climate change and could be used as a means of opening up an extended public dialogue on developing new forms of societal engagement with the different aspects of climate change. But for this thesis, the findings concentrate on the sublimity of climate change broadly understood.

The chapter is written in twelve sections:

Findings from theory
Implications of theory
Findings from the first tranche of interviews
Findings from the second tranche of interviews
Comparing the findings
Implications for science
Implications for policy makers
Implications for advocacy groups
Implications for business
Implications for communities
Implications for individuals.

Findings from theory *(See Chapter 4 for discussion)*

Strictly speaking theory on its own does not produce findings. I use the term findings here to stand for a resume or very short summation of how the theory of the sublime coalesces around a set of ideas relating to sensory overload and experiential extreme. This summation is derived from the historical sketch of the conceptual evolution of the sublime to be found in Chapter 4 of this thesis.

The sublime, encountered as experience, is found in the surpassing of our every day selves. Such a sublime occurs in a life limiting situation in which the subject comes to some form of self realisation (*Tsang 1998. 36*). Tsang identifies the sublime as present at the zenith, plenum and nadir of human experience *(ibid. 38-42).* We can think of everyday life as occurring within an envelope of sublime potential that is ever present but immanent, and which is accessed through some extra-ordinary encounter with a phenomenon capable of jolting ourselves out of the every day. As an experience, the sublime lies at or beyond the limit of language and is not describable *(ibid. 36*). The sublime experience is powerfully affective and through that affectivity has transformative potential. The nature of the sublime experience is such that we are bound by that experience to confer upon the triggering object or phenomenon, the attribute of sublimity. *(See pages 102/3 for a review of Tsang's sublime of finitude*)

An object may be taken by us to be sublime, where the object is deemed to have triggered a sublime experience within us. But an object may also be deemed sublime where it is withdrawn from us and not directly experienceable or presentable, but which we feel that, were we able to directly experience it, the experience would be sublime to us. *(See pages 56 & 77-80 & 87-91 for discussion of the sublime as withdrawn.)* Because the sublime experience is overwhelming to us, withdrawn objects deemed by us to be sublime are taken to possess overwhelming qualities, in terms of their scale, power, complexity, transformative potential, intelligence, rate of evolution or any other attribute that we might confer upon them. We may experience representations of such objects in everyday life, but these representations always fall short of the sublime object, which remains withdrawn and unpresentable.

The sublime is affective to us. We are compelled by sublimity to respond to it, initially by being simultaneously drawn towards it and deflected from it, or repelled by it, then by affecting psychological distance from it; for example through denial or disbelief or an inability to accept what

we may well believe to be true. But because the sublime produces a sense of our own self realisation, we are also able to come to terms with it to the extent that we can represent the sublime conceptually, and draw that representation into the linguistic realm. Such an achievement has been identified by classical writers on the sublime as a source of supreme pleasure. In Kant, the triumph of reason over the sublime, as he sees it, has profound moral consequence. *(See pages 69-72 for discussion of the Kantian sublime)* However, for the large part, our representations of the sublime are associated with inescapable finality; they are mythologised and are apocalyptic in nature. In these cases, the sublime produces debilitating resignation, or fantasies of redemption, both militating against positive practical engagement with that which is taken to be sublime.

In Western culture, the sublime has evolved from its earliest instantiation in Longinus as an irresistible force, capable of transporting the reader or listener. For Longinus, the ground for the sublime is laid by the writer/orator, but it arises spontaneously, only after much sincere dedication to perfecting his art. Thus, from the very start, characterisations of the sublime are paradoxical in nature. For Sappho, (*see pages 100/101*) the sublime is incandescent and all consuming, setting her heart afire with no safeguard or prospect of retrieval from it through good measure, reason, or any other means. For Burke, (*see pages 66/67*) the sublime is astonishing, chaotic and at the same time supremely admirable; in Kant, the sublime's metaphysicality is trumped by reason, only to escape again in the Romantic sublime (*see page 72*) as a grand fusion or mind, nature and language. In its technological guise, (*see pages 73-75*) the sublime becomes a source of modernist triumphalism and American national identity. In postmodernity, (*see pages 56 & 75-80*) the sublime becomes withdrawn and unpresentable but is associated with the hidden powers of capitalist corporations that drive a fast evolving hyper-space within which the evolution of technology increasingly outpaces the human capacity to comprehend it. In Tsang, (*see pages 102-104*) the sublime awaits us wherever the human brushes against an extreme of lived experience. Finally in contemporary writing, the hyper-object becomes the apotheosis of the sublime through its incomprehensible vastness, complexity and consequence for the human. (*See pages 87-93*)

The attribution of the epithet 'sublime' to climate change allows us to look at climate change through a multi facetted lens made up of these different aspects of the sublime. When we do so, we are taken on a journey that ventures far from the orthodox policy discourse[2] on climate change,

[2] I use the term orthodox policy discourse in a restricted sense throughout this thesis to refer to the standard and most widely accepted published reviews of climate change science and its policy implications. The IPCC and Royal Academy occasional reviews of climate change science and policy are cases in point. As I use it, the term should not be thought of as including disputation or other discourse that runs contrary to these canonical accounts of climate change.

which, when we look back on it from the vantage point of the sublime, can be seen as aiming to reduce climate change to an apolitical and technologically manageable entity, contained by an untrammelled hegemony. By contrast, in Morton's hands, for example, climate change's sublimity calls us to question the very nature of our relationship to the planet and to one another and to ourselves. In Lyotard's, the influence of the sublime is deeply undermining. In popular culture, representations of climate change as apocalyptic may either inspire us, or or cause us to despair, but are more likely lull us into inaction and fantasy. In all cases, the sublime of climate change tends towards an undoing of how the discourse of manageability would have it.

Implications from theory.

From the foregoing it is clear that an encounter with the sublime is disruptive of everyday experience and indeed, everyday apprehension of the world around us. Where climate change is construed[3] as sublime we should expect disruption of its orthodox interpretations. Where orthodoxy or habit is disrupted an opportunity for increased self activation has been noted to arise. (*Verplanken et al 2008*). The habit discontinuity and self activation hypotheses go some way towards supporting the ideas below, particularly, that an encounter with sublimity, through its disruptiveness would trigger self exploration and increased contextual awareness of some kind or another. Responses to the sublime, however go beyond those of simple habit disruption.

With respect to this research project, the theory suggests that the sublimity of climate change should be driving some degree of existential exploration among the interviewees through their engagement with climate change. There should also be some evidence of deflection or denial, or psychological distancing, even among those engaged in developing climate change agendas. And there should definitely be concern over climate change discourse being dominated by hegemonic orthodoxy. Where interviewees sense of climate change is heavily influenced by Jameson style post-modernity, we should expect to see some evidence of despair or disengagement. We should also find some evidence of deep mistrust of the orthodox account of climate change due to the functioning of a Lyotardian sublime. The transformative potential of the sublime experience suggests that the sublime might be active in inspiring counter hegemonic initiatives to address climate change.

[3] For a discussion of the sublime as construed see Tsang 1998.30

Findings from the analysis of the first tranche of interviews. *(See Chapter 5 for discussion)*

The findings broadly confirm that a sublime effect can be detected in how the first tranche interviewees talk about climate change. The most striking findings are firstly, that interviewees' constructions of climate change are highly individual. (*See pages 49 & 133-139*) Interviewees draw on aspects of the science, as they understand it, to fashion a version of climate change that fits into their overall world view. The second most important finding is that interviewees' views of climate change are heavily coloured by their concerns over the inescapable, as they see it, domination of capitalist hegemony. (*See pages 110-112*) They are deeply frustrated by the hegemonic view of climate change as a quantifiable externality that needs to be absorbed by the market. The third most important finding is that climate change tends to drive some degree of existential exploration, at the level of the individual, although that exploration is also aimed at societal transformation. (*See pages 126/7*) In all three cases a sublime effect is arguably present. In the first instance the personal representation of climate change stands in for the unfathomable and unpresentable whole. This relates to Lyotard's account of the postmodern sublime. In the second case, the fixation on hegemony evidences the presence of a Jameson style sublime effect. In the third instance the sublime of climate change effects an undoing of the quotidian and serves as a platform for conscious awakening.

In more detail:

Interviewees present their own versions of climate change.

Each interviewee fashions their own version of climate change. This might be seen as hardly surprising since individuated accounts of any aspect of life are pretty much that; they are individuated. But here there is more at play. It is as though the interviewees have gone to look at climate change as it pre-exists in its objective externality, and found it too vast to take in. So they have selected a particular view of it, one that happens to fit well with their previously formed world view, and they have used that to create their own version of climate change. This highly edited version of climate change is their stand-in for the unpresentable real thing. Here we see evidence for a Lyotardian sublime at work.

In forming their subjective impression of climate change, interviewees tend to draw on readily available narratives; for example, as found in broadsheet media and the more readily available reports or summaries of reports, such as the IPCC reviews of climate science. But because this group of interviewees is well informed and highly educated, their acceptance of the readily available climate change narrative is cautionary.They are well able to take a critical stance with

respect to the mainstream narrative, and they do so, their stance being informed by their already established world views.

In the interviews, what is discussed is always the individual interviewee's version of or "take on" climate change. Again, this is hardly surprising given that this was what was being asked of them: to reveal *their* understanding of climate change. But In practice, for the most part in these discussions, climate change becomes a vehicle for talking about what these interviewees see as profound shortcomings in the prevailing socio economic paradigm and its associated politics. A sense of alienation pervades the discussions, perhaps most succinctly captured in CS's remark:

> *When Thatcher was voted into power, I became a stranger in this world ..*
>
> *(CS interview*)

Significantly, interviewees by and large can see no practical means of escaping the prevailing hegemony. This evidences the presence of a Jameson sublime. *(See pages 75-77 for discussion on the Jameson sublime.)*

The sublime has disruptive potential

The hegemonic interpretation of climate change, as a quantifiable externality that needs to be absorbed by the market, is unacceptable to these interviewees. They simply do not wish to look at climate change in this way. From the interview material, this appears to be the case because interviewees see themselves as trapped within capitalist hegemony, with little chance of escape, unless the hegemony itself can be punctured. Climate change has the potential to disrupt the hegemony, but once undone, there is no knowing how the play of counter hegemonic influences will play out (*see pages 110-113 for discussion on hegemony*).

Over and over again, when we talked about climate change, actually what was talked about was the interviewee's concern for a happiness, which they felt was being denied them by the hegemony, just as much, if not more so, than it was being threatened by climate change. But *the hegemony* is also responsible for the production of climate change, in their view, so there is at least some notion of equivalence between absence of happiness and presence of climate change. Again, the absorption in the hegemony evidences a Jameson sublime. But there is also a sense of the apocalyptic in the way that these interviewees talk about climate change, even as they recognise the potentially numbing effects of such an interpretation of climate change. *(See pages 122 & 170 for discussion on apocalyptic climate change)*

Interviewees feel themselves cut off from, or alienated from climate change

Reflecting on the interviews as a whole, most interviewees were not that taken up with climate change per se. They were much more interested in their immediate lives and other political concerns. It was striking, the extent to which, within the individual interviews, the notions of climate change they espoused, fitted their particular world views. And it was these world views that tended to dominate the discussions. Given that the subject of the discussions was the perception of climate change, that fact, that climate change was actually taking second place (or third or fourth or fifth place) behind other concerns is significant. The interviewees recognised the magnitude of the potential threat of climate change as a global issue, but at a personal level their concerns for climate change were trumped by what they saw as more immediate issues. This evidences a degree of deflection and psychological distancing that theory associates with the sublime. *(See pages 157-160 and ….for discussion on psychological distancing and the three world's model.)*

The delusion of a safe place

In their constructions of climate change, interviewees tended to view climate change as a distant phenomenon, although they understood that the global climate is already changing. The effect of distancing climate change, is a sublime effect. It is produced courtesy of what is taken to be a safe place, from which the otherwise overwhelming sublime phenomenon can be viewed without engulfing the spectator. The safe place, for these interviewees is the present; the here and now, which they experience as being largely unaffected by climate change. DT describes the creation of the safe place through the promulgation of targets for constraining future global warming. LT describes how climate change is pushed into *a receding future,* when viewed from the safety of the present. And for each interviewee, the present is largely crowded out with immediate preoccupations that serve to further force climate change into the background. But this safe place is very much illusionary.[4] It is already contained within global warming and is largely a product of the mismatch between human and geological time scales. Nonetheless, the fact that climate change is viewed as if the present were a safe place, is evidence of a sublime effect. (*See pages 100 & 175-177 for discussion on the erosion or absence of the safe place.)*

[4] In the classical sublime of Burke, for example, the safe place is essential to the experience of the sublime. Without it, one would be engulfed in the monstrosity of what one beheld. But in the post-modern sublime of Jameson, we are already inside the phenomenon taken to be sublime. The idea of there being a place of safety within such a sublime is problematised, to the point that if it exists at all, it does so as illusion. See the discussion of the erosion of the safe place in Chapter 4. In the Sapphic sublime the idea of a safe place is anathema.

Climate change as impetus for existential exploration

An important thread that ran through this set of interviews was the idea of existential exploration, driven by the prospect of climate change. For these interviewees, climate change calls into question the accepted values of the hegemonic life style. Partly this is connected to the apocalyptic view of climate change and the sense of finality that produces. But the drive towards deep questioning was not dependent on an apocalyptic view. Quite the opposite. Several interviewees, NS, DT and LT for example, feel very strongly that while climate change could provide an impetus towards a re-evaluation of environmentally destructive societal norms, there is no need to depend on climate change as the driver. Rather the more immediate benefits in terms of human well-being that could emerge from simple lifestyle changes, made in response to immediately pressing concerns, might be the precursors needed for society at large to begin to seriously address climate change. And for DT and OPK, such a re-evaluation might well set in progress the deeper self evaluation that they see is fundamental to the establishment of a truly sustainable society. Inner transformation, it was felt, might have the potential to produce an entirely new world view. In this latter case, if such a transformation were to come about at the collective level, then it might provide the conditions for the creation of some new model of society; one that would possibly be better able to address climate change as an objective threat, because the deep societal causes of climate change had been recognised and addressed. The idea of existential exploration being connected to climate change, and more so, to its being integral to an adequate response to climate change, is largely absent from the mainstream technologically focussed discourse. But is central to viewing climate change as sublime. (*See pages 126/7 for discussion on existential exploration*)

Mobius model of revolutionary change[5]

This model of the external and objective being drawn into the internal and subjective, to effect an inner transformation of the subject which is then turned outwards as a demand for change in the external conditions affecting the subject, suggests the possibility of a climate change inspired eruption from within the hegemony. Ordinarily, (from within the hegemony) we think of climate change threatening the prevailing socio economic orthodoxies from the outside, as it were. Indeed an orthodox view of climate change is as an economic externality, or market failure. With this new view of climate change, we see its potential to disturb or disrupt the hegemony coming from both the outside *and* the inside. The disruptive potential of climate change may therefore be much

[5] I am indebted to my PhD Supervisor Andy Stirling for many things but in this instance, especially for a parallel discussion in outside inside outside exchanges where Andy uses the visual metaphor of the Klein bottle to illustrate the idea of knowledge as an active agent operating both externally to and internally to a subject.*(https://www.slideshare.net/Stepscentre/andy-stirling-nexus-methods-rgs-2016)*. Mobius topography was first discussed in reference to subjective structuring by Lacan (*Fink.1997*)

greater than has previously been thought. This is because we have not previously given sufficient consideration to the inner responses of people who feel they are threatened by climate change. *(See page 52 for discussion of the Mobius model.)*

The importance of the individual

If the orthodox discourse on climate change is being selectively drawn on, to be fitted into a pre-existing world view, or to provoke existential exploration, this draw-down is to the level of the individual. It is the individual's world view or inner transformation that is being effected. Given that the construction of a world view, or the process of inner transformation necessarily takes place at the level of the individual, (regardless of one's views on societal transformation) albeit using socially constructed concepts to do this, then it can be argued that the most relevant level of analysis of climate change is actually that of the individual.

What came across most powerfully through the interview process was the individuality that was clearly present within each construction of climate change. I consider this finding to be more than an artefact of the individual interview method adopted for this research. Without a doubt, we use a common language and share many common concepts, but each construction is personal. It comes out of, and has to make sense of a world view formed from that individual's life experience. And of especial relevance to this study, the construction is loaded with the emotional investment that individual has committed to it.

The whole process, and here I am referring to all twenty two interviews, has something important to tell us about social scientific inquiry in general. And that is: we lose sight of the individual at our peril. *(See pages 52 & 133-139 for further discussion of the individual perspective.)*

Findings from the analysis of the second tranche of interviews *(see Chapter 6 for discussion)*

In the second tranche of interviews, generally speaking, there is less cohesion of view than in the first tranche. While being distinctly individualistic, the first tranche of interviews can be broadly characterised as dominated by concern over hegemonic control of the definition and meaning of climate change, and by a broad, but not universal, acceptance of orthodox climate science. Here, with this second tranche of interviews, there is less cohesion. This is partly an effect of the differing constituent make up of the two sets of interviewees and partly because in the second tranche of interviews, the discussions come much closer to the actual formation of climate science and policy. A third factor is that with the second tranche interviewees, that climate change can be understood in some regards as sublime, is taken as the starting point for discussion, its having been

established in the earlier interview set. So in these interviews, what we see more clearly, with respect to the sublime, are the different and contradictory effects that the various facets of the polythetic sublime can produce. So, for example: the presence of distancing and deflection and to some degree denial, present within some interviewees' own articulations of climate change, or their discussion of others' perceptions, evidence the presence of a sublime effect, as an inability to accept what one may otherwise recognise as true. This can be contrasted with perceptions of climate change from other interviewees, arising from the consideration of present day climate change from the perspective of the Earth's deep history. This can produce a profoundly committed and appreciative sublimity, which has diametrically opposed implications to that of denial. And both the foregoing can be contrasted with the sublime functioning in apocalyptic mode, which is discussed at several points across the interviews and which again produces its own brand of effect.

So when examined in close up, as takes place within these second tranche interviews, the sublime of climate change can be seen as contradictory, fragmented and disruptive of orthodoxy in its different effects, even as it can be seen as possessing deeply affective and transformative potentials, both at individual and societal levels. When we look at climate change in terms of its polythetic sublimity we also see it, not just as belonging to a world out there and external to us, but as already containing us within it, and already being contained by us as an object of consciousness. Arguably, such an entity is not reducible to a market feedstock, nor can it be subjected to constraint through the application of technology in its current or immediately foreseeable states of development. This is a major finding from this tranche of interviews.

From the sublime perspective, the orthodox understanding of climate change is seen as the product of a reductive science, functioning within a market dominated hegemony. From within that view, climate change appears to be "well understood by science" *(NT interview),* and manageable by being brought into the global market system. But from the sublime perspective neither claim can be justified. *(See pages 150-153 & 158-160 for NT comments on manageability and the status of climate science.)*

When interviewees are encouraged to look at climate change through the lens of the sublime, (however they choose to fashion that lens,) the effect is to allow climate change to escape its straight-jacketed conformity. As it does so, it appears less manageable, less consensually understood, and more demanding that human civilisations transform themselves, right down to the level of individual consciousness. The sublime perspective opens up climate change and invites an appreciation of the human presence on Earth as emergent from the Earth's deep history, as a critical but transitory experiment in reflective awareness. *(See page 145-150 for reference to the deep time perspective.)*

There is no consensus among the interviewees as to whether human civilisations will be able to adapt sufficiently and quickly enough to what appear to be the more extreme demands of climate change. This is partly the result of powerful sublime effects operating within human consciousness that cause us to turn away from what we perceive as overwhelming.

But there is a powerful sense running through the interviews that humanity has entered a time of crisis, as the Earth is already committed to fundamental systemic change as a result of collective human influences. The effects of these global changes will play through human societies and will produce geo-political upheaval. The resultant turmoil will be unevenly distributed across societies and what will emerge from the processes of global systems and societal change is not knowable to us. *(See pages 123 & 150-153 for reference to systemic crisis*)

The sublime, however, also functions as a source of deep inspiration, to the extent that one is able to open to it. There is evidence from the interviews that such inspiration is driving transformative regenerative initiatives that may act as powerful counter hegemonic forces. (*See pages 171-173 for reference to inspirational affects.)*

From the sublime perspective, climate change is not a problem that can be solved. Rather it is a condition of life to which the human is being called to awaken.

In more detail:

Interviews confirm multidimensional sublime

Climate change can be understood as sublime, in terms of its spatial and temporal vastness, its potential to overwhelm us, its unpresentability, its complexity, its summoning of the appreciative within us, and its post-modern hyper-spatiality. The multi facetted vision of climate change that these sublime perspectives offer, confirm analyses of climate change that present it as wicked (*Rittel & Webber 1973*), or super-wicked (*Levin et al 2012*) or post-normal (*Funtowicz & Ravetz 2003*) but with the additional insight of the importance of the appreciative mode of human consciousness for designing responses to climate change. (*Discussion of climate change in terms of the wicked and super-wicked is explicated in Chapter 6*)

The long view: at the edge of a radical state change in the Earth system.

Looking back on the deep history of the Earth suggests a clear directionality towards greater complexity in life and greater energy dependence and throughput. However, at the moment of systemic change, contingency rules. Past directionality should not be relied on as indicating the

future nature of fundamental change. There is, for example, no ratchet effect that might stop a reversal of directionality, should natural or societal system change be sufficiently profound. (*OG interview*) However, the long view suggests that a policy response to climate change based on an attempt to reverse a global systems change already underway, would be misguided. (*SM interview on page 147/148*)

Distancing is a response to the overwhelming power of climate change

When we consider climate change as sublime, the issue of psychological distancing from it becomes more understandable. Distancing can take many forms: deflection, denial, clinging to value systems or modes of understanding that are out of touch with changing realities. (*BD interview*) We perceive climate change as 'distant' through the construction of a safe place in the here and now, from which we imagine we can safely view climate change as belonging to the future and affecting far away places. Climate change is classically sublime in precisely this sense (*DC interview*). However, in postmodern versions of the sublime, the idea of the safe place falls away and is replaced with the sense of our being already suffused by the sublimity of that which contains us, and over which we have no direct power or control. Climate change is one such containing entity. Corporate power is another. Both are global phenomena, both are entangled in one another. To OT, the most viable route to influencing climate change is therefore to try to encourage corporations to compete and co-operate on strategies that are climate change responsive. (*OT interview*). Governments will have some limited influence here, but for the rest of us, our relative powerlessness makes the issue of distancing from climate change all the more germane. *(See pages 51 & 120 & 175 for discussion on the safe place.)*

Climate change is withdrawn and unpresentable.

The abstract and withdrawn nature of climate change and the crowding out of the immediate present with other matters of concern further distance climate change from us. We may attribute weather events or ecosystem change to climate change, but climate change itself is never directly available to us, other than through our attribution of it to an event or through our acting in response to it in such a way that it becomes part of our belief system. This is another aspect of climate change's sublimity, aptly described in the ER and KE interviews.

The super complexity of climate change militates against a closed discourse.

The more complex a system the more unpredictable its responses to external forcing or internal disintegration. Complexity breeds uncertainty. Interviewees suggest that attempts at optimising inherently complex and uncertain system states against pre-conceived goals or pre-established values is to invite unintended consequences. LB strongly advises building in flexibility to our

policy responses to climate change, so that we are better equipped to deal with the inevitable surprises the super-complex climate system will throw at us. Wherever possible we should keep our options open. The orthodox discourse, to the extent it is aligned to reductive science is not able to come to terms with the super complexity and "wickedness" of climate change. (*CV interview) (see pages 150 - 154 for discussion on complexity.)*

Climate change is not directly presentable.

To the extent that climate change is represented to us encased within a meta-narrative, its presentation will be distrusted. The "tightly policed consensus" (*AR interview*) of climate change science is a case in point. The second tranche interviewees were sceptical and in some cases scathing of the claimed IPCC consensus on climate science. As soon as that science escapes the very basics of the greenhouse effect and ventures into the realms of prediction, the consensus begins to break down, as far as these interviewees are concerned. The very idea of science being able to "wrest predictability from the inherently complex" (*CV interview*) is called into question. The consensus is non existent among the interviewees when it comes to how societies should respond to climate change. Its representation as measurable risk locates climate change within the hegemony as part of a depoliticising strategy, Its representation as apocalypse is paralysing of action. Neither is attractive to these interviewees. Climate change remains remote, withdrawn and sublime behind its many representations. Seeing this sublimity casts a light onto the political interests and power plays integral to any representation of climate change.

Sense of finality associated with climate change tends to close off reasoned debate.

There are two important findings with respect to the sense of finality associated with apocalyptic versions of climate change. The first is that finality tends to produce an all or nothing response to the threat of climate change. Corporate denial as a strategic response to climate change has in the past been produced by fear of loss of value of assets associated with future revenue streams. Exxon Mobil's early response to climate change is a case in point (*OT interview*). A similar but opposite extreme response can be seen in the policing of the climate science consensus that, according to AR brooks no criticism. AR argues that the censoring or outright dismissal of views on climate change that gainsay the consensus is bad for science, in that normal scientific truth claims depend on their falsifiability. The same closure, AR argues undermines freedom of expression and democratic values. NT argues that extreme views on either side are equally unhelpful. Where climate change is positioned as a "hoax" or the "end of times" both extremes mitigate against the clear thinking that practical action to address the threats of climate change depend upon. *(See page 161/162 for references to reasoned debate.)*

Interviewees who are more immediately engaged in climate change response projects are less despairing of climate change than climate scientists looking at the big picture.

The second tranche interview group was made up of climate scientists and others actively engaged in developing policy and on the ground initiatives to address climate change. The latter group were, by and large, far less prone to despairing over their assessment of future climate change than the scientists who were steeped in visions and measurements of global material systems failure. This is not to suggest that those engaged in practical actions addressing climate change were in denial of the severity of risk that human civilisations face from climate change or that they were ill informed as to the science. What came through in the interviews was, however, that the more a person was steeped in a whole systems perspective, and saw that potential means of mitigating and adapting to climate change involved transformative action at multiple integrated systems levels, *and was actively engaged in bringing such transformations about,* they were drawing inspiration from feeling that their work was aligned and attuned to the planet's natural regenerative capacities.

Appreciative sublime motivates a positive response to the challenges of climate change

This point relates to the positivity being experienced by interviewees engaged in practical regenerative initiatives to address climate change.(*CV and McD interviews*) Tsang talks of an "appreciative sublime" as an important mode of the sublime that occurs "in the fullness of life" (*Tsang 1998. 38-42*). It is as though we feel that with regard to what we are doing, life is on our side, and this feeling acts as a powerful motivator for us to continue our efforts in the face of what otherwise might be regarded as overwhelming obstacles. The appreciative sublime seems to emerge through our deep engagement with life. Such a sublime can arise naturally as a sense of profound gratitude for the moment of our lives, through many cultural practices. With the practice of meditation, this is especially so. (*KE interview*). (See also my comments on meditation as an aspect of researching the sublime in Ch 2)

Comparing the findings

The findings from the two sets of interviews both complement and in some places contradict one another. Two distinct differences stand out. In the first set of interviews, interviewees are much more concerned about their entrapment within a capitalist hegemony, over which they feel they have next to no control. These interviewees also, for the large part, take the science "as read".

In the second tranche of interviews, there is far more insistence on the possibilities of counter hegemonic initiatives emerging from the threat of climate change. There is also far more criticism of the scientific consensus.

The differences can be accounted for through the selection of the two sets of interviews. For tranche 1, interviewees are highly educated commentators on climate change and in some cases on the sublime. For tranche 2, they are climate scientists or are actively engaged in initiatives or policy making aimed at addressing climate change. The tranche 2 interviewees are closer to the "coal face" of climate change than the tranche 1 interviewees. Both groups clearly understand that the mainstream remedies for climate change being put forward under the UNFCCC processes, are couched so as to sit within the hegemony of global market capitalism. But for the tranche 1 interviewees who have less agency over the development of the science and of collective initiatives to address climate change, than tranche 2 interviewees, their perception of that science and these initiatives is more ideologically bound. For tranche 2 interviewees, the opportunities to develop counter hegemonic initiatives and discourses are far more immediate and real. *(See Stoddart (Stoddart (2007. 191-225) for a discussion of the ideology, hegemony discourse spectrum).* What seems to be happening across the two sets of interviewees is that the closer we come to "where the tyre hits the road for climate change" (*ER interview*) the more the coherence of the ideological view and the apparent control of the hegemony disintegrates. So we see that viewing climate change discourse as largely ideologically bound ,is actually an effect of distance. The sublime is already at work.

The findings from the interviews strongly confirm the expectations of theory with respect to the presence of sublime effects influencing perceptions of climate change. Sublime theory, as discussed in my evolutionary sketch (*CH 4)*, is strongest when it talks about climate change as overwhelmingly vast and powerful and productive of sublime effects such as deflection and the apocalyptic vision. Sublime theory is also strong where it shows, in its postmodern iterations, the erosion of the safe place and the collapse of the moral elevation of the classical sublime. The theory is weakest where it fails to pick up on the inspirational influence of the appreciative sublime, encountered by those actively engaging with what appears to others as the overwhelming vast and distant.

Implications

The following implications are derived from the research findings.

For science

For science: the implication is to open up the consensus and to foreground controversy that is currently buried beneath the political correctness of the IPCC's scientific consensus. This implication arises from Lyotard's '*incredulity towards grand narratives*' that is a defining feature of the postmodern sublime. Such incredulity suggests that the tighter the consensus, and the more it

is insisted upon, the more the sublime effect will serve to undermine its credibility. By way of example, there are profound methodological and predictive disputes among Arctic scientists over the Arctic sea ice Death Spiral theory that are suppressed in the orthodox IPCC discourse (*Wadhams 2016. 88*). If brought to the surface as legitimate scientific controversy, these would serve to diminish the sublime effect that erodes trust. Trust is being eroded simply because the presently dominant narrative of climate change presents itself to the world as consensual and in a sense complete or "settled" (*Berry et al 2016. 590*).

At the same time, the popular discursive division between climate change *believers* and *deniers* is also undermining of science, and it too serves to bolster the erosion of trust. The division of available opinion positions into two absolutist oppositional camps (using language normally associated with religion) acts as a crude over-simplification of an issue that is plagued with scientific and policy complexities, uncertainties and unknowns. If a more realistic spectrum of positions on the veracity of the available science were available within the orthodox discourse, (and this would depend on the opening up of the consensus) theory suggests, perhaps paradoxically, that the science, now more openly controversial and less certain of itself, would enjoy greater public trust. Berry et al (*Berry et al. 2016*) call for "the full deployment of a Popperian epistemology" that would allow falsifiability to dissolve what they see as a "poisoned debate between climate change believers and deniers". *(ibid. 596)*. To re-build societal trust in climate science they argue, there must first be acknowledgement that:

> *we are confronted by ideologically polarised positions that prevent an honest debate in which each side acknowledges the good faith positions of the other.*
>
> (*ibid.606)*

For policy makers

For policy: the focus should be on policy prescriptions for climate change 'that make sense anyway'. Theory suggests that the disconnect and helplessness produced by the sublime, point to societies needing to find rationales other than climate change before they will willingly align behind policies aimed at driving behavioural change. For example, energy and transportation system policies could emphasise security, availability, efficiency and affordability, and not prioritise what are seen as abstract threats that evoke a sublime response. Policies aimed at climate change adaptation should foreground specific material threats such as intensifying storms or prolonged droughts, not the causal factors behind the immediate phenomena. At the level of strategy, policy makers should take special note of the historical evidence supporting the view that large scale sublime events (such as 9/11) have provoked policy responses that have incurred drastic negative

impacts at the societal level. Climate change, or major events associated with climate change, such as the moment of final irreversible loss of Arctic sea ice, have this potential.

A second implication is that policy makers should design policy assuming that the complexity of the natural and societal systems they seek to influence, will throw up unintended consequences for every initiative that is enacted. Policies based on optimisation of benefits against costs should give way to policies that have the greatest support among stakeholders and at the same time have the most flexibility built in to them. Both factors will enable rapid reaction to adverse unintended effects and system surprises arising out of policy implementation.

F*or NGOs*

For NGOs, and change advocates: the priority should be to provide and promote a plurality of positive visions of the kinds of world we want for our children and in particular, to specify practically actionable escape routes from the prevailing destructive hegemony. NGOs should also heavily support societal experimentation aligned to these visions. This is a crucial and highly demanding task, given the engulfing effects of the sublime, which make it extremely difficult to conjure the '*lines of flight*' (*Deleuze and Guattari 2004.134*) that open up possibility for transformation away from dominant narratives. The post 2008 Arab Spring and Occupy Movements signally failed to provide such positive visions and quickly lost momentum towards societal transformation, even in the face of the most blatant failure of their dominant political and economic paradigms. (*Curtiss 2016*) One of the most important potential sites of contestation, perhaps the most important, in terms of providing opportunity for creative envisaging of future societies, is the emerging struggle for definition of the so called Anthropocene, itself a cultural product of climate change.

F*or business*

For business and finance: through innovation, networking and supply chain management, the priority should be to drive towards a post fossil energy and closed cycle economy. Corporate business and business organisations should leverage their standing with governments to promote policies that foster this drive. Arguably, by operating within tightly defined and rationalised business models, and being highly attuned to opportunities for renewal, expansion and diversification, business is better equipped than any other social sector, to withstand the disabling functions of the sublime that permeate contemporary society. The corporate business community is well placed among societal groupings to lead on addressing climate change, by developing new post fossil fuel material cultures, and encouraging new demand trends to support rapid economic transition away from destructive production, distribution and consumption practices. A significant number of

interviewees see market transformation as the most viable mechanism for adapting life styles to the threats of climate change. They also see the continued production of wealth and the acceleration of technological development as central to the evolution of a smart and sensitive human presence on a planet undergoing deep systems change.

For communities

For communities: their aim should be to foster support networks and act as incubators for societal experimentation. The sublimity of climate change (as apocalyptic) produces powerful nihilistic effects (*Lee. 2016*). But such effects do not exhaust human possibility. The finitude implicit in apocalyptic visions of climate change can also give rise to powerful creative responses. Humans have survived and evolved by their sociality, through long ages of environmental hostility. Arguably, humans are hard wired to meet the challenges of environmental perturbations, most effectively so, when co-operating within communities.

The findings from this research show that diverse community level initiatives, rather than monolithic intergovernmental agreements and commitments, are the basis for both practical inspiration and hope for human adaptation to climate change. Closed cycle networked local economies that foster regenerative design for ecosystem recovery and sustainable resource provision, can mitigate the negative sublime effects of climate change and indeed produce a positive appreciative sublime that acts as a source of deep inspiration.

F*or Individuals*

For individuals: to practice conscious withdrawal in order to open up an appreciative sublime.
It is the individual who is most exposed to the debilitating effects of the negative sublime - the unseeing, the sense of helplessness, the erosion of morality, the disconnection. When part of a group, community of interest, or a business, things are very different. The group member is not so fully exposed, because here one plays a role and (hopefully) has the support of others. As an individual, one is just what one is. The sublime, operating across and throughout contemporary post-modern society, and not the least through forebodings of climate change, has the effect of eroding meaningful reference points to which the individual might attach him or herself. Without clear reference points, the individual is thrown into uncertainty.

Practices of conscious withdrawal, may however, offer a potentially transformative breathing space. Because such practices entail attaining to some degree of inner silence and therefore the creation of some inner distance between the conscious individual and the particular subjectivity

that individual normally inhabits, the possibility opens out, at the level of the individual, of achieving a degree of creative renewal that mitigates the cloying influence of the negative sublime. At the same time, the inner distancing achieved may open onto an inner appreciative sublime whose positive potentials are boundless.

When asked what should young people, facing a life that will increasingly be dominated by the effects of climate change, what should they do now, the interviewee NT said, without hesitation: “accept it absolutely”. The main implication of this research, for the individual, is that they should follow this advice and practice the art of absolute acceptance, but not just of climate change, but of themselves as an emanation of planetary life.

Chapter 4 *The sublime: an evolutionary sketch.*

Introduction

In the introduction to her 2014 bestseller *This Changes Everything,* Naomi Klein describes an all too common refusal to admit to, or a turning away from, the subject that she feels compelled to write about. She writes:

> *We look for a split second and then we look away. Or we look, but then turn it into a joke ("more signs of the Apocalypse"). Which is another way of looking away…or we look but tell ourselves comforting stories about how humans are clever and will come up with a technological miracle that will safely suck the carbon out of the skies…..Or we look but try to be hyper rational about it ('dollar for dollar it's more efficient to focus on economic development than climate change')….or we look, but tell ourselves we are too busy to care about something so distant and abstract - even though we saw the waters in the subways of New York City…..*
>
> *(Klein 2014.3/4)*

Such a turning away is not necessarily an act of deliberate denial. It is, more directly, an inability to look at, (an unseeing) and therefore an inability to make count what cannot be beheld. George Marshall makes clear this distinction between conscious denial and inability to acknowledge, in this telling example:

> *In 1942 the Polish resistance fighter Jan Karski gave eyewitness testimony to the Supreme Court Judge Felix Frankfurter, of the clearing of the Warsaw Ghetto and the systematic murder of Polish Jews in the Belzec concentration camp. Listening to him, Frankfurter, himself a Jew, and one of the outstanding legal minds of his generation, replied, "I must be frank. I am unable to believe him." He added: "I did not say that this young man is lying. I said I am unable to believe him. There is a difference".*
>
> *(Marshall 2014.1)*

Humanities scholars characterise objects or events that produce such a deflection among observers or witnesses, as *sublime.* Like a trip switch in an electrical circuit, which, when the loading breaches its safety parameters, closes the system down, so, in the immediacy of the overwhelming, the sublime produces a failure of imagination - perforce we look away. In this thesis I contend that sublimity or the sublime is a feature of our perception of climate change and may be an attribute of climate change itself, and that to the extent that climate change is sublime, it necessarily resists being directly and fully apprehended.[6] Its sublimity obliges us, in some sense or another, to look away, so that, in all cases, what we can see of it, or allow ourselves to see, and

[6] The ascription of the sublime as a feature or property of an object locates the sublime as external to subjective apprehension. See the discussion below on the Longinian sublime.

therefore how we are able to represent it and respond to it, is at best partial. Such sublimity, I contend, suffuses all levels of engagement, or disengagement with climate change; it applies to the science of climate change, the development of climate change policy, climate change advocacy, climate change denial and all popular characterisations of climate change.

In this chapter I discuss the nature of the sublime and the consequences of its producing a sublime effect. I sketch the evolution of the concept from its 'discovery' in a first (or third) century Greek fragment, *Peri Hypsous,* through various iterations to its post modern and contemporary treatments where its applicability to climate change is most apt. I show that, through its intellectual development, we never really move far from the original Longinian version. I offer an interpretation of the sublime as accumulating as well as varying in meaning as it travels through the history of Western culture to the present day. I suggest that how the sublime is interpreted today, has its roots in its historical interpretations. I treat the contemporary sublime as polythetic, its every instance refracting in one way or another, its historically accumulated meaning.

But I also contend that what the sublime refers to is an unchanging facet of human consciousness that defies categorisation because it occurs as a non linguistic extreme that is both self negating and self illuminating, and that belongs neither to subjectivity nor objectivity. It is felt inwardly and conferred outwardly. Across its history, writers on the sublime refer to its undoing or self negating aspects, as well as the supreme uplift the human can experiences in response the sublime experience. As a concept, one might say that the concept *sublime* is itself sublime. It is both recursive and self referential. Even as we reach to comprehend it, we are deflected by it. We are both challenged by it and dismayed by our failure to grasp it in its fullness. The sublime is always escaping. In its escaping the sublime points at that which escapes us. When referred to or conferred upon an object of human consciousness, such as climate change, the sublime refers to that about climate change which escapes us, through its sublimity.

The chapter is written in ten sections:

Longinus
The Classical Sublime - Kant and Burke
The Romantic Sublime - Coleridge
The Technological Sublime
The Postmodern sublime - Jameson
The Postmodern sublime - Lyotard
The sudden intrusion of the excluded: the production of the sublime

The sublime of climate change - hyper objectivity

The sublime of climate change - complexity and the internet of things.

The Sapphic sublime

Finitude and the sublime - Tsang

Conclusion: a polythetic sublime

The sketch does not claim to be an exhaustive review of the literature on the sublime. It is written to be sufficient for me to take an evolutionary understanding of the concept into the interview situation where I use it to engage with climate scientists, policy makers and others on their perceptions of climate change.

Longinus

To begin at the beginning:

> *…the sublime, wherever it occurs, consists in a certain loftiness and excellence of language, and that it is by this, and this only, that the greatest poets and prose writers have gained eminence, and won themselves a lasting place in the Temple of Fame. A lofty passage does not convince the reason of the reader, but takes him out of himself. That which is admirable ever confounds our judgement, and eclipses that which is merely reasonable or agreeable. To believe or not is usually in our power; but the Sublime, acting with imperious and irresistible force, sways every reader, whether he will or no. Skill in invention, lucid arrangement and disposition of facts, are appreciated not by one passage, or by two, but gradually manifest themselves in the general structure of a work; but a sublime thought, if happily timed, illumines an entire subject with the vividness of a lightning-flash, and exhibits the whole power of the author in a moment of time.*
>
> *(Longinus: Havel 1894.2)*

We see immediately certain properties of the sublime that remain attached to it through its evolution, and clearly some that fall away. The sublime has the capacity to ‘confound our judgement’. It overshadows ‘reasonableness or agreeableness’, it acts with irresistible force, it strikes like lightning, it ‘illumines’ its field of reference, it somehow reveals or suggests the whole power of that which lies behind it ‘in a single moment’. These tend to be the qualities that endure.

However, as the concept evolves and begins to move through European cultural history, and certainly in its American iteration, it loses its peculiar attachment to the arts of writing and oratory, and it loses that central aspect of the Longinian treatise - that whereas the sublime is ultimately a

product of inspiration (*ibid.3*) it is also a product of technique, of a carefully crafted balance between depth of thought (lack of depth in the underlying thought "*hollows out"* the would be sublime (*ibid.5*)) and height of delivery, (not too high lest sublimity lapse into bombast (*ibid.6*)). As such, the Longinian sublime cannot *fully* be taught or practiced. It occurs spontaneously, but can only spring from a mind cultivated by long hours of immersion in technique. Gradually, it is this immersive side of the Longinian sublime that loses ground to the notion of transcendence as the idea of sublimity evolves.

In Longinus, the sublime is a phenomenon which is produced by the writer/orator, but which is experienced by the reader/listener. Sublimity, here, is more than a peculiar type of relationship between writer and reader; its ontology is not simply relational, and it is more than a literary quality. But neither does the sublime belong to or reside with either party to the exclusion of the other; both writer and reader are implicated in it. Rather, Longinus treats the sublime as an entity in its own right, brought to life, evoked or summoned by the writer, in order for it to cast its spell over the reader, transporting the latter to a state of *ekstasis*. "……*but the Sublime, acting as an imperious and irresistible force, sways every reader whether he will or n*o". (*ibid.2*)

Thus, along with a gradually evolving emphasis on transcendence in the sublime, its ability to elude permanent capture by any rigid categorisation has also, although not without serious challenge, travelled with it through time. Doran puts it this way:

> *….the sublime has often been seen as torn between mutually opposed categories: ancient/ modern, classical/Romantic, rational/irrational, empirical/transcendental, material/ metaphysical, ethical/aesthetic, textual/psychological.*
>
> *(Doran 2015.3)*

To which could be added *subjective/objective*. How has this fundamental dualism fared through time? Do we do the sublime a disservice, or at least, do we not dishonour its origins, if we seek to locate it exclusively within a particular category or domain, as, for example, belonging entirely on the side of the subject, as the classical (18th century) writers tended to do? Both Kant and Burke see it so. Kant epitomises the move:

> *…true sublimity must be sought only in the mind of the judging subject, and not in the object of nature that occasions this disposition by the judgement formed of it. Who would apply the term 'sublime' even to shapeless mountain masses towering above one another in wild disorder, with the pyramids of ice or to the dark tempestuous ocean, or such like things? But in the contemplation of them, without any regard to their form, the mind abandons itself to the imagination and to a reason placed, though quite apart from any definite end, in conjunction therewith, and merely broadening its view, and it feels itself elevated in its own judgement of itself on finding all the might of imagination still unequal to its ideas.*

(Kant (1790) 2008.86/7)

Kant's sublimity of mind, nonetheless originates in Longinus, in as far as the sublime, as a product of momentary genius, is a product of mind (*Longinus: Havel (1894.70*). Here for example, we find in Longinus a similar theme to Kant's "heroic subjectivity" (*Doran 2015. 6*), but Longinus retains what one might call his categorical ambivalence; genius may soar above its object of contemplation, but the object, in this case nature, is never to be lost hold of:

> *….that it was not in nature's plan for us, her chosen children, to be creatures base and ignoble, - no, she brought us into life, and into the whole universe, as into some great field of contest, that we should be at once spectators and ambitious rivals of her mighty deeds, and from the first implanted in our souls an invincible yearning for all that is great, all that is diviner than ourselves. Therefore even the whole world is not wide enough for the soaring range of human thought, but man's mind often overleaps the very bounds of space.*
>
> *(Longinus: Havel 1894.68)*

The 'overleaping" smacks of hubris. Longinus reminds his pupil of a need to chart a careful course between excess and paucity ('*frigidity*") of spirit, between "*bombast* "and "*puerility*" *(Longinus: Havel 1894.6)* that is a necessary component of the balance between depth of thought and height of delivery that he sees as key to producing the sublime. And humility should be exercised with respect to nature, even as the mind seeks to soar over it. Longinus continues:

> *When we survey the whole circle of life, and see it abounding everywhere in what is elegant, grand and beautiful, we learn at once what is the true end of man's being. And this is why nature prompts us to admire, not the clearness and usefulness of a little stream, but the Nile, the Danube, the Rhine, and far beyond all, the Ocean: not to turn our wandering eyes from the heavenly fires…..to the little flame kindled by human hands, however pure and steady its light, not to think that tiny lamp more wondrous than the caverns of Aetna, from whose raging depths are hurled up stones and whole masses of rock, and torrents, sometimes come pouring from Earth's centre, of pure and living fire.*
> *To sum the whole: whatever is useful or needful lies easily within man's reach; but he keeps his homage for what is astounding.*
>
> *(ibid 69)*

Here we see Longinus suggesting that it is to nature, in her most expansive and powerful forms that our ultimate regard should be directed. And this, all the more so because nature is the foundation or source of language, which in Longinus, is the exclusive carrier of the sublime. Again, Longinus is cautioning against the all too prevalent tendency of the human to get ahead of itself Thus we have:

> *….in art we admire exactness, in the works of nature magnificence: and it is from nature that man derives the faculty of speech. Whereas, then, in statuary, we look for close*

> *resemblance to humanity, in literature we require something that transcends humanity. Nevertheless (to reiterate advice which we gave at the beginning of this essay), since that success which consists in avoidance of error is usually the gift of art, while high, though unequal excellence is the attribute of genius, it is proper on all occasions to call in art as an ally to nature. By the combined resources of these two we may hope to achieve perfection.*
>
> *(ibid. 70)*

Longinus further cautions his pupil, and in my reading of Peri Hypsous, this particular cautionary with regard to the sublime is the most telling: the danger, this time, lies on the side of the reader, not the writer. Bearing in mind that the Longinian sublime acts "*with imperious and irresistible force*" *(ibid 2.)* a force well able to intoxicate the reader/listener, Longinus cautions:…..

> *It is natural to us to feel our souls lifted up by the true sublime, and conceiving a sort of generous exultation to be filled with joy and pride, as though we had ourselves originated the ideas which we read.*
>
> *(ibid. 12)*

The sublime moment comes, we are overwhelmed, but then we have this need, Longinus observes, to lay claim to or take hold of or possess the very power that exalted and overwhelmed us. There is, in a sense, a transference of exultation from the writer/orator, who, in striking the moment of genius, transfers the same, or some of the same to the reader/listener. But then there is this tendency in the listener/reader to want to run off with it. Not so much to be humbled by the majesty of the sublime, to acknowledge the moment of genius for what it is, but to be deluded into believing that its grandeur is in fact a quality of our own mind, and worse, that we ourselves are responsible for that grandeur and capable in some way of reproducing it ourselves. The point becomes clearer in the Doran translation:

> *It is our nature to be elevated and exalted by true sublimity (hypsos). Filled with joy and pride, we come to believe we have created what we have only heard.*
>
> *(Longinus: Peri Hypsous 7.2. in Doran 2015. 55)*

The Classical sublime: Kant and Burke

As the notion of sublimity is taken up by 18th century writers, and indeed as the sublime travels into the 19th and 20th centuries, that very tendency for the reader to lay claim to *"what we have only heard"* becomes *the* dominant factor in the evolution of the concept. Doran observes a definite handing across of the sublime to the side of the reader, listener or witness (*Doran 2015. 55 fn 101*). The sense of writer/reader intersubjectivity, apparent in the Longinian sublime, recedes as the sublime becomes more widely associated with grandeur writ large, *as perceived by the subject*. The sublime is no longer associated exclusively with the spontaneity of genius and its transference from writer to reader, as in the Longinian sublime, it now comes to be associated with anything experienced as overwhelming, from political revolution to the forces of nature. And the sublime becomes all about "swelling" the self importance of the beholder. This passage from Burke echoes Longinus while clearly referring to a different source of the sublime:

> *Now whatever either on good or bad grounds tends to raise a man in his own opinion, produces a sort of swelling and triumph that is extremely grateful to the human mind; and this swelling is never more perceived, nor operates with more force, than when without danger we are conversant with terrible objects, the mind always claiming to itself some part of the dignity and importance of the thing which it contemplates. Hence proceeds what Longinus has observed of that glorying and sense of inward greatness, that always fills the reader of such passages in poets and orators as are sublime; it is what every man must have felt in himself on such occasions.*
>
> *(Burke 1990.46)*

A remnant of the Longinian transfer (from writer to reader) persists in the need for there to be a distance of some kind between the entity taken to be sublime and the observer; both Burke and Kant make this point. (See for example the above quotation from Burke) The sublime occurs when what would otherwise be overwhelming, is viewed from a safe place. However, by far the most important factor as the sublime is taken up by Enlightenment writers, is the notion of the superiority of the beholding subject and the moral enhancement of the observer resulting from his engagement with the sublime, itself now regarded as a phenomenon of mind. In this respect, as Brady observes, the classical sublime is more 'self regarding than other regarding' (*Brady 2013.69*). That one may still confer the sublimity that arises in the mind of the beholding subject, upon the object beheld, such that the object is taken to be the source of sublimity, is regarded by Kant as: 'an error of subreption' *(ibid).*

> *Thus the feeling of the sublime in nature is respect for our own vocation, which we show to an object in nature through a certain subreption (substitution of a respect for the object instead of the idea of humanity in our subject), which as it were makes intuitable the superiority of the rational vocation of our own cognitive faculty over the greatest faculty of sensibility.*
>
> (*CPJ 25. 5:257.141 in Brady 2013.70*)

Now, an encounter with the sublime is a very powerful experience, so much so that it involves a failure of '*sensible imagination*' (*Kant 2008. 82*) which cannot cope with the experience. Such a failure of imagination and a consequent frustration at our inability to form a judgement on what is before us, (*Shaw 2008. 78*) however, calls forth the transcending power of reason which supplies a concept to account for that which cannot be represented in sensible imagination. This is the essence of Kant's claim that the ennoblement, experienced as sublime, comes from the capacity of human reason to triumph over the failings of intuition or the overwhelming of the senses:

> *we express ourselves, on the whole, inaccurately if we term any object of nature sublime…..All we can say is that the object lends itself to the presentation of a sublimity discoverable in the mind. For the sublime, in the strict sense of the word, cannot be contained in any sensuous form, but rather concerns ideas of reason which, although no accurate presentation of them is possible, may be aroused and called to mind by that very inadequacy itself, which does admit of sensuous presentation.*
>
> *(Kant 2008. 76)*

The experience of the sublime remains ambivalent however. The failure of imagination is disturbing, and displeasing. Its rescue by reason, however, demonstrates the superiority over nature of that unique characteristic of the human, in Enlightenment thought - reason. And this is the source of a profound pleasure:

> *The feeling of the sublime is at once a feeling of displeasure, arising from the inadequacy of imagination in the aesthetic estimation of magnitude to attain to its estimation of reason, and a simultaneous awakened pleasure, arising from this very judgement of the inadequacy of sense of being in accord with ideas of reason, so far as the effort to attain to these is for us a law.*
>
> *(ibid. 88)*

In its appropriation by Enlightenment writers, the sublime loses that mysterious quasi-objectivity which is a feature of the Longinian account and settles firmly in the camp of the subjective. In Kant it is Reason, ultimately, that attains to the highest, when invoked by the experience of failure of the imagination to represent the overwhelming or formlessness in nature. *"All we can say is that the object lends itself to the presentation of a sublimity discoverable in the mind"* (*Kant 2008.76).* The classical 18th century sublime is subjective. No object, in and of itself can be sublime.

Kant's project is ultimately aimed at containing the unruly formlessness of the sublime as encountered in nature. He achieves this by invoking the transcendent power of reason which is able to ascribe a totalising concept to that which defeats the senses *(Kant 2008. 85).* Thus conceptual order and harmony and the moral superiority of the rational subject appear to prevail. However, not all classical writers on the sublime were able to find such a resolution. Writing about the French Revolution, Burke finds that in its sublimity, nothing adds up, there is no harmonious resolution, totalisation is not available and reason most certainly does not prevail; all points that become central to later 20th century writers on the sublime.

> *Everything seems out of nature in this strange chaos of levity and ferocity, and all sorts of crimes jumbled together with all sorts of follies. In viewing this monstrous tragic comic scene, the most opposite passions necessarily succeed, and sometimes mix with each other in the mind: alternate contempt and indignation; alternate laughter and tears; alternate scorn and horror.*
>
> *(Burke 1969. 22/3)*

In his analysis of the sublime Kant draws an important distinction between what he calls the mathematical and the dynamical sublime. Brady reads Kant to mean that in encountering the sublime there are distinctly different ways in which the event:

> *…….puts us in touch with our moral capacities and reveals to us, through sensible experience, our capacity for freedom.*
>
> (*Brady 2015.59*)

The mathematical sublime is associated with overwhelming scale (relative to the human) and a floundering attempt to grasp that scale in a single leap of the aesthetic imagination, rather than apprehending it through some form of mathematised extension. But where the imagination fails, reason produces a rescuing concept, such as the infinite or near infinite, and we are inwardly freed from the oppressive failure of imagination.

> *Through imagination's effort to aesthetically comprehend the absolutely great, and its subsequent failure, 'the very inadequacy of our faculty for estimating the magnitude of the things of the sensible world awakes a feeling of the super-sensible in us" (CPJ.25, 5:250, 134) In other words, where imagination fails to take in the sensible particulars of such vast magnitudes, we are made aware of reason's capacity to provide an idea of the infinite. '…nature is thus sublime in those of its appearances, the intuition of which brings with it the the idea of its infinity. (CPJ.26, 5:255, 138)*
>
> (*ibid 59/60)*

With respect to the dynamical sublime, the association is with overwhelming power. We feel powerless in the face of the phenomenon we behold. The fear that arises in response to our powerlessness is only stayed by our observing the overwhelmingly powerful force of nature, from a place of safety. Thus the safe place makes possible the aesthetic appreciation of that which we would otherwise, like an animal, flee from. For Kant, the very fact that we do not flee, even as our sensible imagination is overwhelmed by the superior power of what we behold, demonstrates to us our capacity for inner freedom from our outwardly focussed senses, and again awakens within us a sense of our 'moral vocation'. (*ibid.62*)

In his reading of Kant, Lyotard stresses that the division of the sublime into the categories mathematical and dynamical does NOT imply there are two kinds of sublime. (*Lyotard 1994. 90*)

Rather, (as I read Lyotard), in the experience of the sublime, what to the sensible imagination becomes incomprehensible through its scale, and constitutes a failure in the extensiveness of imagination, (the mathematical sublime) is also sensed as being overwhelmingly powerful through an excess of intensiveness of feeling (the dynamical sublime). The phenomenon deemed to be sublime cannot be contained either extensively, nor intensively. The the sublime entails an undoing of the apprehending subject's external and inner worlds, which in Kant, then calls forth redress by dint of reason's capacity to supply a compensating idea for the extensive failure, and an inner distancing from sensual failure by dint of the subject's positioning in relation to the sublime phenomenon: the freedom contingent upon the safe place. Thus the dynamical and mathematical refer to the intensive and extensive aspects of the same sublime. Think fear of formlessness. The power of the sublime adheres to its unpresentability.

The Romantic sublime: Coleridge

The great 19th century Romantics sought to retrieve a unity of mind and nature that is lost in Kant and his fellow classical writers. Sublimity no longer is to be sought in the triumph of reason, however; it now comes to exist in a divine fusion of mind, language and grand nature, where nature is to be found in the depths of the human soul as well as in its manifest and glorious exteriority. But the classical turn in favour of subjective apprehension of the sublime is never fully rejected. Nonetheless, in the Romantic sublime, nature has the upper hand, sweeping the division between interior and exterior, subject and object aside. And language once again, as in Longinus, provides the bridge to that transcendence. Thus we have:

> *In looking at the objects of Nature while I am thinking, as at yonder moon dim-glimmering thro' the dewey window-pane, I seem rather to be seeking, as it were asking a symbolic language for something within me that already and forever exists, than observing any new thing. Even when the latter is the case, yet still I have always an obscure feeling as if the new phenomena were a dim Awakening of a forgotten or hidden Truth of my inner Nature.*
>
> *(Coleridge 1805 in Shaw 2008.94)*

However, *d*espite his some time stated aim to *"*destroy the old antithesis of Words and Things", (*Coleridge 1800 in Shaw 2008.95*) Coleridge remains close to Kant:

> *I meet, I find the Beautiful - but I give, contribute, or rather attribute the sublime. No object of Sense is sublime in itself, but only so far as I make it a symbol of some idea. The circle is*

> *a beautiful figure in itself; it becomes sublime, when I contemplate eternity under that figure. The Beautiful is the perfection, the Sublime the suspension, of the comparing Power. Nothing not shapely….can be called beautiful; nothing that has a shape can be sublime except by metaphor.*
>
> *(Coleridge 1800 in Shaw 2008.95)*

As the 19th century progresses, focus on the sublime shifts from a concern with the formless grandeur of nature to the colossal in terms of human technological achievement. In this further move, we see more clearly the direction of travel of the sublime's conceptual evolution. Very clearly the sublime is losing its capacity to take possession of us, and we are very clearly gaining the capacity to take possession of it. But is this direction of travel any more than a realisation of Longinus's cautionary that we "*come to believe we have created what we have only heard*"? Are we doing any more than journeying ever more deeply into hubris?

Consideration of the technological sublime requires a shift in registers in our account of the sublime. We move from a discussion of subjective apperception to a description of the appropriation of key phenomena for the purposes of creating a national identity.

The technological sublime.

In his 1994 work, the *American Technological Sublime*, David Nye argues that a uniquely American sublime, a sublime of populist experience, was central to forging the national identity following the American Revolution in the late 18th century. Lacking a monarchy, an established church, or "*a long history memorialised at the sites of important events" (Nye.1994. 24*) the new nation sought its identity initially from the land, which provided powerful objects a plenty, to astonish and admire as uniquely American. Popular pilgrimages to natural wonders, such as Niagara Falls and the Grand Canyon, rather than the construction of national monuments glorified the nation in the early 19th century (*ibid. 25*). In this way, Nye suggests, experience of the natural sublime was formative to the emerging democracy alongside its new political institutions and Constitution. Of that new politics,

> *Its key concepts were independence, virtue, popular sovereignty, citizenship and commonwealth. Since politics was expected to inspire vigorous debate, and continued self examination rather than automatic patriotism, another realm of unquestioned allegiance was needed to unite the citizenry. Hence the centrality of the natural and technological sublimes. While voters might disagree on the issues of the day, they could agree on the uplifting sublimity of the Niagara Falls….or the Erie Canal.*

(Nye 1994. 35)

Nye notes a peculiar "*double action of the popular imagination*" where the natural and technological sublimes become conflated:

> *the land was appropriated as a natural symbol of the nation while, at the same time, it was being transformed into a man made landscape. One appeal of the technological sublime was that it conflated the preservation and transformation of the natural world…….Those who praised Niagara Falls and a new railroad did not see any inconsistency in embracing both.*
>
> *(ibid. 37…39)*

Indeed, such were the distances between centres of population and the most glorious sites of nature, that without the technical achievements of the railroad, (and later the highways and air travel) the natural sublime as popular cultural would not have emerged. The colossi of nature and technology were linked symbiotically in the sublime.

> *…the American sublime fused religion, nationalism and technology, diverging in practice significantly from European theory. It ceased to be a philosophical idea and became submerged in practice……The American sublime was for all, women as well as men. Rather than the result of solitary commune with nature, the sublime became an experience organised for crowds of people……Not limited to nature, the American sublime embraced technology. Where Kant had reasoned that the awe inspired by a sublime object made men aware of their moral worth, the American sublime transformed the individual's experience of immensity and awe into a belief in national greatness.*
>
> *(ibid. 43)*

Sky scrapers, Hollywood, the Manhattan and Apollo programmes, each epitomises the sense of American greatness realised through the extremes of technological power through the mid to late 20th century. Then, as the century comes to a close, a new emanation of the technological sublime emerges in the form of transnational corporate power and the ubiquity of electronic communications networks.

I now turn to briefly consider the postmodern sublime, a sublime under whose emanations we currently live, as I describe below.

The postmodern sublime: Jameson and hyper-space

Traditionally, the sublime is considered with reference to overwhelming grandeur of rhetoric or of natural phenomena and more recently of technology. A key aspect of this consideration has been the capacity for the observer to somehow step away from the overwhelming, or at least to be able to see the sublime from a safe distance. It is this distance in either time or space that allows the

observer to recover from the immediate check on the imagination initiated by the sublime and to then conceptualise that which the '*sensible imagination*' failed to comprehend.

However, with the postmodern sublime, we find ourselves in a radically different situation. Our condition is one where we are already and inescapably inside the phenomenon that appears boundless to us and which we might wish to consider sublime. Jameson, for example understands the postmodern condition as one of being caught in an emergent '*hyperspace*' *(Jameson 1991. 37)* defined by a technological complex which defies adequate representation, and which itself is a metaphor for a ubiquitous network of all but invisible capitalistic power relations.

> *our faulty representations of some immense communicational and computer network are themselves but a distorted figuration of something even deeper, namely, the whole world system of present-day multinational capitalism. The technology of contemporary society is mesmerising and fascinating, not so much in its own right but because it seems to offer some privileged representational shorthand for grasping a network of power and control even more difficult for our minds and imaginations to grasp: the whole new de-centred global network of the third stage of capital itself.*
>
> *(Jameson 1991. 36)*

Such a space is always culturally 'ahead of us' because our 'perceptual habits' *(Jameson 1991. 37/8)* that were developed in the period of late modernism, develop more slowly than the rate at which the technologically driven 'hyperspace' evolves. We therefore find ourselves locked into an un-winnable game of catch-up, where we fall further and further behind in hyperspace, whose evolution outpaces our capacity to keep up with it. In such a situation we necessarily find ourselves ceding more and more of the hyperspace to artificial intelligences and become more passive to them. Witness the algorithms which selectively bias online news feeds according to the recipients browsing history (*Curtiss 2016*). Jameson suggests that hyperspace has invaded every aspect of life. There are no capital free enclaves; nature has been 'effectively abolished' (*Jameson 1991. 120*), reduced to a Heideggerian 'standing reserve' (*Heidegger 2011. 225-229*) or resource for further capitalistic exploitation. In this sense, and to the extent that climate change is a postmodern phenomenon of abolished nature, the climate becomes a potential profit centre for invasive capital. At the same time, the notion *climate* is perpetually moving into an increasingly incomprehensible future, all the more so, paradoxically, as our knowledge of it, gained through our cultural, political, scientific and technological engagements with it, increases.

However, Jameson theorises that in this new hyperspace, any kind of autonomy that might previously have been recognised as belonging to, for example, culture, as opposed to technological development or the economy or politics, is dissolved. Each is now suffused by the other, not with the effect of their being abolished, but on the contrary, with the effect of their becoming boundless, invasive and omnipresent. With respect to culture, Jameson notes:

> *the dissolution of an autonomous sphere of culture is…. to be imagined in terms of an explosion: a prodigious expansion of culture throughout the social realm, to*

> *the point at which everything in our social life -- from economic value and state power, to practices and to the very structure of the psyche itself -- can be said to have become "cultural"……*
>
> *(Jameson 1991. 47)*

The same can be said of the economy where the monetisation of everything appears as an inexorable trend, (*Conniff 2012*) and where profound economic inequalities characterise both national and international politics; where the political reaches down into the private and deeply personal and where the reach of technology also appears to know no bounds. In such a space the autonomy and cohesiveness of the postmodern subject, itself part of that space, is profoundly thrown into doubt:

> *distance in general (including "critical distance" in particular) has very precisely been abolished in the new space of Postmodernism. We are submerged in its henceforth filled and suffused volumes to the point where our now postmodern bodies are bereft of spatial coordinates and practically (let alone theoretically) incapable of distantiation; meanwhile, it has already been observed how the prodigious new expansion of multinational capital ends up penetrating and colonising those very pre-capitalist enclaves (Nature and the Unconscious) which offered extraterritorial and Archimedean footholds for critical effectivity.*
>
> *(Jameson 1991. 47/8)*

The effect on us, as the left behind beings of a hyper-space whose acceleration in development away from us, and its collapsing of distances upon us, to the point of invasion of our own subjectivities, is to render us morally defunct. Such is the dark sublime of the post modern:

> *What we must now affirm is that it is precisely this whole extraordinarily demoralise ing and depressing original new global space which is the "moment of truth" of Postmodernism. What has been called the postmodernist "sublime" is only the moment in which this content has become most explicit, has moved the closest to the surface of consciousness as a coherent new type of space in its own right -- even though a certain figural concealment or disguise is still at work here, most notably in the high-tech thematics in which the new spatial content is still dramatised and articulated.*
>
> (*ibid 42*)

With respect to climate change, this suggests that we can no longer separate out our economic from our political, technological cultural or indeed deeply personal engagements with the climate. And the climate itself cannot be separated out from the intimacies of our own lives. The hyperspace of the postmodern suffuses both.

We might then be tempted into thinking of postmodern hyperspace as having some kind of totalising hold over us, given Jameson's theorisations and my observations about their implications for climate change. However in the postmodern, things are not so simple. Nothing adds up.

The postmodern sublime: Lyotard, the failure of presentation.

For Lyotard, the postmodern revolves around that which can and cannot be represented and it rests on the breakdown of established forms of legitimation.

> *Simplifying to the extreme, I define the postmodern as incredulity towards meta-narratives.*
>
> *(Lyotard 1984. xxiv)*

Where legitimation is genuine, we accept the authority of presentation. Science presents us with the facts of climate change, for example, and these are beyond dispute only for as long as we accept, or believe in, the authority behind the presentation; that is, for as long as we believe its meta-narrative. But when we exercise incredulity towards that meta-narrative, for example, when we no longer believe in the independence of science the way we used to, what is presented to us as fact, no longer necessarily holds true for us. And this, all the more so, where the authority insists on its own validity and produces 'independent' evidence to that effect, in its own support. When the credibility of expert authority in general becomes open to question, as distinct from any particular case of expertise, what is presented in the specific case still becomes open to doubt, even though the particular expert authority may, in this case, be trusted. This doubt, in the case of expert scientific presentation, is not so much a doubt in a scientific sense, but in a deeper postmodern sense. Nothing is to be fully trusted. Behind every utterance of every authority, someone, or some entity stands to gain from this particular presentation of the 'truth'. Who are they? What is their game?

Science does not and cannot stand outside of a postmodern society as objectively true. In the hyperspace of postmodernity, as we have seen, there are no autonomous regions. Everything, to a degree, spills over into everything else. So when an act of government, based on claims of irrefutable evidence, for example, plays loose with the truths that government purports to stand up for, it contributes to the general pool of distrust that constitutes the postmodern. Everything, in a sense, becomes tainted by everything else. When the same government acts in another field, putting forward its policy on climate change, for example, as being consistent with the latest science, which it claims is also irrefutable, it is deemed to have drawn from the same pool it previously contaminated. Deep down, it will not be trusted. (*Coyle 2013*)

This situation where knowledge becomes fundamentally unstable, where the contestable reins and no meta-narrative is truly credible, is postmodern in a Lyotardian sense. And lest one be tempted to position the postmodern as itself a meta-narrative, (*Habermas 1981. 3-14*) let us immediately be clear that no one really believes in it. We are incredulous towards our own incredulity and act as though we do in fact believe. Zizek stresses this point. (*Zizek 1989. 185-6*)

Incredulity, however, is not the same as abandonment. Postmodern meta-narratives thrive on reflexive incredulity. We lend them temporary or reluctant credence, most usually because we feel we are locked into the status quo that they underpin, or because we can see no way out of their hegemony. Only we don't quite believe that we are inextricably locked in, or that the hegemony we experience can be absolute in practice, in defiance of theory.

> *Critical understanding of oneself . . comes through the struggle of political "hegemonies," of opposing directions, first in the field of ethics, then of politics, culminating in a higher elaboration of one's own conception of reality. The awareness of being part of a definite hegemonic force ... is the first step towards a progressively higher self-consciousness, in which theory and practice finally unite…*
>
> *(Gramsci: Il Matieralli Historico 11 in Bates 1975. 360)*

Lyotard's '*incredulity towards meta-narrative*' has the effect of emptying out what one might call intrinsic value or the social sincerity implicit to ideas such as Gramsci's theory of hegemonic struggle. Nothing in Lyotard is fully real, and value can only be relative. In Peri Hypsous, Longinus warned of the 'hollowing out' effect of shallowness of thought or underlying principle; no presentation can reach the standard of the sublime unless its foundation is deep. In Lyotard, by contrast, the broad sense that the contemporary is pervaded by empty realities is the very stuff of its sublimity. He argues:

> *…..capitalism inherently possesses the power to de-realise familiar objects, social roles, and institutions to such a degree that the so- called realistic representations can no longer evoke reality except as nostalgia or mockery,…..*
>
> *(Lyotard 1984. 74)*

De-realisation underpins modernity:

> *Modernity, in whatever age it appears, cannot exist without a shattering of belief and without discovery of the "lack of reality" of reality, together with the invention of other realities.*
>
> *(ibid. 77)*

Reality depends on an agreement between a concept and its representation as an example or case of itself. Where this agreement breaks down, you have the Kantian sublime, which:

> *develops as a conflict between the faculties of a subject, the faculty to conceive of something and the faculty to "present" something. Knowledge exists if, first, the statement is intelligible, and second, if "cases" can be derived from the experience which "corresponds" to it…..The sublime …..takes place, on the contrary, when the imagination fails to present an object which might, if only in principle, come to match a concept. We have the Idea of the world (the totality of what is), but we do not have the capacity to show an example of it. We have the Idea of the simple (that which cannot be broken down, decomposed), but we cannot illustrate it with a sensible object which would be a "case" of it. We can conceive the infinitely great, the infinitely powerful, but every*

> *presentation of an object destined to "make visible" this absolute greatness or power appears to us painfully inadequate. Those are Ideas of which no presentation is possible. Therefore, they impart no knowledge about reality….*
>
> *(ibid.78)*

Arguably global climate change provides us with a clear example of the Lyotardian sublime. No *'presentation'* of global climate change, in a particular storm, or series of storms, or spreading desert or shrinking ice cap, in and of itself, presents the global phenomenon *in toto*. To get anywhere close to that, we have either to reduce the real to a series of abstracted measurements and equations or indulge in a feat of addition, where, taken together, the sum of observable, tangible events (plus the abstract measurements and equations) can be taken as amounting to a change in the global climate; that is, as a departure from the state the climate would otherwise have been in, were it not for anthropogenic climate forcing.

But then do we fully trust the meta-narrrative? Do we fully trust the departure from the counter-factual that expert authority asserts is the case? Where the evidence before our eyes seems to support it, possibly we do, to an extent. There is however, a great deal of evidence to show that where the evidence before our eyes might appear overwhelmingly to be a demonstration of climate change, (we were victims of a particularly violent storm,) actually, we tend to refuse that explanation (*Marshall 2014.5-10*). Where the evidence before our eyes appears to contradict climate change, (things appear to be carrying on as usual) and we are wholly reliant on expert authority and its interpretation of that evidence, we find ourselves in the very position that Lyotard determines as *postmodern.* That is, we find ourselves caught in a paradoxical tense; the future (post) anterior (modo) (*Lyotard 1984.81*). Our future is to be found in an ice core, hundreds of thousands of years old (*Petit, Jouzel & Raynaud et al. 1959).* We find ourselves subject to the presentation of the unpresentable. And the nature of just such a presentation is that we cannot believe in it wholly, or perhaps it's not so much that we cannot believe in it, as maybe we can believe it, but we cannot accept it (*Marshall 2014.1*). So we turn away (*Klein 2014.2/3*).

A postmodern presentation of the unpresentable is never and can never be an actual presentation of the unpresentable. All it can do is allude to it. Two very well known examples from late 20th century British fine art make the point clearly. Damian Hurst's 1991 work *The Physical Impossibility of Death in the Mind of Someone Living* confronts us with a dead tiger shark preserved in formaldehyde, encased in a giant steel and glass vitrine.Tracy Emin's *'My Bed' (1998) ,* presents us with a grubby, unmade bed, strewn with the detritus of booze, sex and menstruation. Neither work is able to present the impossible present to which they allude, rather they present the fascinating horror of an aftermath. Both works have been critically acclaimed as exemplars of the contemporary sublime (*White W. 2010*). The point of relevance to the presentation of climate change is simply that an irreducible gap exists between what can be presented and what can't. And because of this aporia, the evidence can never add up to the reality it alludes to. At no point can the sensible present the reality of climate change, which, in a sense is always obscured by its

claimed to be sensible manifestations. The spectre of doubt can never be removed, and this particular shadow speaks to the larger doubt that pervades the postmodern, whose underlying paradox is that these doubts do add up; they are real to us, only we are obliged to doubt them. Lyotard defines the postmodern as:

> *that which, in the modern, puts forward the unpresentable in presentation itself; that which denies itself the solace of good forms, the consensus of a taste which would make it possible to share collectively the nostalgia for the unattainable; that which searches for new presentations, not in order to enjoy them but in order to impart a stronger sense of the unpresentable.*
>
> *(Lyotard 1984. 81)*

If the Lyotardian sublime usefully depicts our contemporary quandary with respect to climate change, then we should find within the overall discourse, significant gaps and discrepancies within and between private concerns, public priorities, climate change policies and scientific narrative. Nothing should add up. And indeed nothing does. Most fundamentally, there is a profound discrepancy between climate change as understood by science as being objectively real, (within varying specified degrees of certainty) and the various subjective responses of differing interest groups and individuals to the news that the climate is changing because of human interference. Two very different kinds of knowledge are at play here. And they do not necessarily add up, in the sense that their fundamental frames of reference have nothing in common. The kind of doubts that one might describe as postmodern, or as psychological denial are not the same as scientific uncertainty.

> *….a theory may be pseudoscientific even though it is eminently 'plausible' and everyone believes it, and it may be scientifically valuable even if it is unbelievable and nobody believes it. A theory may even be of supreme scientific value even if no one understands it, let alone believes it.The cognitive value of a theory has nothing to do with its psychological influence on people's minds. Belief, commitment, understanding are states of the human mind….But the objective scientific value of a theory…is independent of the human mind which creates it or understands it.*
>
> *(Lakatos 1978.1*)

Marshall describes in great detail the means by which different groups of people, differently subjected to what he takes to be episodes/events that objectively evidence climate change, nonetheless reject the label (*Marshall 2014. 5-10*). Policy makers acting under conditions of bounded rationality will tend to de-prioritise major 'future' related decisions in favour of more work-a-day issues, unless driven by severe threat to make a critical turning point in an established policy trajectory (*Cairney 2012. 97-101*). Witness the 2016 rolling of the UK's Department of Energy and Climate Change into the Department of Business, Energy and Industrial Strategy *(UK Gov. 2016).* But perhaps the clearest example of a '*presentation of the unpresentable*' comes from the 2015 Paris Agreement on Climate Change where it has been left entirely to individual nations to produce their own national responses to the threat of climate change and the challenge of constraining the effects of global warming, so that average global temperatures stay well within an agreed 2

degrees above pre-industrial levels. Literally, nothing by way of individual national commitment is required to add up in this agreement, outside of the agreement that it should, that it would be nice if it did (*Spash 2016a. 2*). There is no mechanism in the Paris Agreement to guarantee delivery of a collective international decarbonisation that meets the scientific requirement. That irksome, but critical detail has been put to one side. The Paris Agreement is structured around an aporia. What better word, then, to describe the Agreement, received and reported by the media as *the world's greatest diplomatic success* (*Guardian Dec.14. 2015*), than sublime - a presentation of the unpresentable.

The sudden intrusion of the excluded: the production of the sublime.

Meta-narrative, or grand narrative - the overall belief system and its corresponding rule set and authority - through which social knowledge is ordered, and which acts as a taken for granted backdrop to social process - is progressively eroded by doubt, in the Lyotardian postmodern condition. No 'beyond doubt' cases of what the meta-narrrative claims to stand for, can be demonstrated. Reality never lives up to the dream. Nonetheless, meta-narratives show remarkable resilience. Nationalism thrives in the face of globalisation (*Azerrad 2017*). Technological advance remains the most widely accepted foundation for prospective human progress in all modern and modernising societies, despite technology's long known unavoidable unintended consequences. (*Merton 1936.894-904)* The myth of the free market - that left to its own devices it will deliver the optimal allocation of resources - thrives despite repeated market failures (*Reich 2013*). Here, even the notion of human rights clings on, despite threats by the current UK Government to withdraw from the Convention on Human Rights (*Evans & McIver 2015*).

Much of the resilience of meta-narrative can be ascribed to its social ordering function. In Foucault's notion of *truth regime, (Foucault 2000b),* truth is inextricably associated with power:

> *"Truth" is linked in a circular relation with systems of power that produce and sustain it, and to effects of power which induce and which extend it — a "regime" of truth.*
>
> *(Foucault 2000b. 132: 1994a. 160)*

In the concept as developed by Weir *(Weir 2008),* a multiplicity of truth formulae (modes) emanate from different sectors in society - government, governance, science, law, religion, education/health/ culture, business, the media - each with their distinct histories; these interact with one another to produce an institutionalised assemblage that amounts to a "heterogeneous" (ibid 385) social reality. The multidimensionality of the truth regime may not provide much coherence (despite

government programmes to order and simplify reality) but it does give it its resilience in the face of continual pressure for change.

Jasanoff and Kim put forward their notion of *socio-technical imaginary* as a form of master narrative that both bounds and directs the development and deployment of technology in key areas of society.

> *We define national sociotechnical imaginaries as "collectively imagined forms of social life and social order reflected in the design and fulfilment of nation-specific scientific and/or technological projects. Imaginaries, in this sense, at once describe attainable futures and prescribe futures that states believe ought to be attained.*
>
> *(Jasanoff & Kim 2009.120)*

The socio-technical imaginary both limits and opens up the possible. Kuhn advanced the notion of *paradigm* as a necessarily agreed set of truths, rules and procedures within which normal science becomes possible (*Chalmers 1982. 90*). Meanwhile Lakatov has developed positive and negative heuristics within which *research programmes* (*ibid. 80*) can be pursued.

All of these approaches share the function of defining and ordering the actual and the possible into some sense of overall coherence within which disparity and contest can take place. But each of them, the truth regime, the socio-technical imaginary the paradigm and the research programme can be overturned. This is the case where their ordering of social or scientific reality is sufficiently undermined, either by a new ordering that is better able to account of the political and materially real, or where they have become sufficiently hollowed out from within, through lack of credibility or functional capacity to meet the real.

Writing about the reality of social constructions, Pfohl notes:

> *All meaningful accounts of the real world are mediated by the social contexts in which such accounts are constructed…….. The ritual historical positioning of humans in relation to cultural objects and stories that we both make and are made over by— this, perhaps, is the elementary form of an effective social construction. This elementary form casts a social circle of believability around artificially constructed accounts of the world. At the same time, the believability of the social constructions that lie inside this circle depends upon what the circle expels to the outside. In this sense, social constructions are, at once, constituted and haunted by what they exclude. This is true regardless of the content of specific social constructions. Constructions of gender and sexuality, war and peace, science and religion, race and coloniality, deviance and social control, economy and value, normal climate change and catastrophic global warming— each is mediated by the social force fields of power and knowledge in which they are produced, reproduced, or challenged.*
>
> *(Pfohl 2008.645)*

It is when the excluded elements of a grand narrative succeed in thrusting themselves into the foreground of a prevailing social order, causing initial bewilderment and disbelief and undoing the world as presented by that order's grand narrative, that the sublime may be said to occur.

I will consider the case for the sublime emerging at the sight of such an intrusion of the excluded by way of an historical example, before considering whether or not the narratives and realities of global capital and the narratives and realities of global warming are irreducibly incommensurable and therefore capable of producing the sublime through their interaction.

Example - 9/11

The event I refer to exerts a spectral force (*Derrida 1993. 48*) across contemporary Western culture. This, one might call, 'the dark side" of the sublime. As Tsang has it, "the sublime at the nadir of being" (*Tsang 1998. 41*)

At 8.43 on the morning of Tuesday 11th September 2001, American Airlines' Flight 11, Boeing 767 struck the north face of the North Tower of the World Trade Centre in New York. 15 minutes later a second 767 struck the South Tower exploding in a fireball that seemed at first sight to slice through the building (*Clifton. 2001*). This second impact removed any possibility that the initial strike had been accidental. With the second, the impossible, although not unpredicted (*Perrow. 2006*), had occurred. The homeland defences of the world's reigning super-power, the most extensive and sophisticated defences on Earth, had been breached.

> *In a little less than two hours, with an almost poetically horrifying symmetry, the symbols and instruments of the city's uniquely air minded culture and of globalization itself, skyscrapers, jets and the mass media would be turned back against themselves with a devastatingly lethal impact and effect.*
>
> *(9/11MXL)*

Both towers collapsed, an event that in itself was unique in the 'city of sky scrapers' history. (ibid). A third tower, World Trade Centre 7 collapsed due to extensive fire damage some seven hours later. The attack on the World Trade Centre with the loss of some 3000 lives *(Wiki 9/11 cas.)* was the most viewed event in television history (*cbs. 9/11*).

The quotation offered above, is drawn from the soundtrack of the video documentary 9/11WTC Time-Zero. Clearly it is reflective in mode. In a sense it acts as a homily to the genius of the attack, which, notwithstanding the terrible loss of life, effected a symbolic decapitation of the value

system its perpetrators opposed. But it also points to the shattering of the grand narrative of the impregnable super-power and its free market materialist ideology that had prevailed at *"the end of history"* (*Fukuyama 1989*). Indeed, the sublimity of 9/11 consists not so much in its horrific spectacle, but in the realisation that what was taking place signalled the break up of the grand narrative.

In its immediacy, eye witness verbalisation as captured on video or mobile phone is typically reduced to outcries of disbelief, horror or utter dismay: expletives dominate, "oh shit" and "oh my God", and live news comment is typically stripped down to an impotent minimum, adding nothing to the visual drama by merely stating the obvious - '*there has been a second strike, a second aircraft has struck the South Tower*" (*YouTube 2nd strike*) and then silence, no comment at all, as the towers collapse, pulverising thousands of office workers and their hapless rescuers caught inside (*ibid*). Much of the communicative power of the documentary 102 Minutes that Changed America, which is a compilation of real time live footage gathered from eye witnesses, professional and amateur alike, and which has no voice over, comes from the failure of words to conceptualise the moment or the images that were captured at the time (Y*ouTube 100mns*).

To its immediate observers, the moment of the attack on the World Trade centre seemed supreme in its horror. The sublime object exerts a spell binding power over its primary witnesses who are unable in its immediate presence to conceptualise it, but are compelled to capture it by some means or another: through these captured images we gaze from a safe distance upon the object of horror too deep for us to fathom (the sublime viewed from a safe distance is a recurrent theme in Burke (*Shaw 2006. 54*) and Kant (*Kant. 2008.91*). The event is transformative in that "*a page is turned*" in the lives of all those who witness it; in terms of reflective interpretation, 9/11 has given rise to a multitude of theories that seek to explain the event alongside and in contradistinction to the 'official' Al Queda account (YouTube is a good source for alternative versions); and in terms of temporality, the moment that ignites the sublime is followed by a long tail of consequence that has yet to be lived out.

In her *The sublime dimensions of 9/11,* Marie-Christine Clemente (*Clemente 2012. 163-190*) offers a detailed examination of the ways in which the events of 9/11 constitute the sublime, according to criteria laid down by Longinus, Burke, Kant, Lyotard, Baudrillard, Zizek and Jameson. Clemente's concern is with the aesthetic categorisation of the Twin Towers attack. Was it '*a work of art*" as Damian Hurst declared *(Hurst 2002)*; did eye witnesses experience the latency of trauma (*Caruth 1995.153);* or Longinian 'ekstasis' *(Doran.2015. 43/44*); or Burkean 'astonishment' (*Burke 2008.16)?* Did they 'delight' (*ibid. 11/12*) in their empathy for the victims of the attack, as Burke had theorised that they should? Did events really conform to the Kantian sublime in the sense that

the excesses of the sensory experience allowed witnesses to call forth the 'super-sensiblilty of reason' to triumph over imagination, even as imagination failed to grasp the enormity of what it beheld (*Kant. 1987. 106 in Clemente 2012. 170)?* Were the attacks of such enormous proportion that they were 'absolute' in their magnitude and beyond any other referent (*Baudrillard 1993. 69 in Clemente 2012. 170*)? Was the 'unpresentable', as Lyotard understands the kernel of the sublime to be, presented *(Lyotard 1984. 78 in Clemente 2012. 179),* in the sense that for all the countlessly replicated images of the attacks, none could reveal the experience of those trapped in the aircraft or in the Towers - the unpresentable (*Clemente 2012. 182*)? Were the events beyond symbolisation *(Zizek in Clemente 2012. 182)* such that the Lacanian Real could be glimpsed, as for example in the falling bodies of those who jumped from the inferno? Was the attack on the World Trade Centre symptomatic of the "decentered global network of the third stage of capitalism" and therefore belonged, in the sense developed by Fredric Jameson, to the postmodern sublime *(Jameson 1991.35 in Clemente 2012. 178)?*

Clemente offers a qualified yes to all of these questions, even as she veers towards the concept of trauma as the most suitable descriptive categorisation for what witnesses experienced.

> *Situated in the realm of the Real, the super-sensible sublime object could possibly be identified as the trauma caused by the event. Lyotard's mention of the "idee" confirms this hypothesis. Indeed an 'idee" is by definition not sensible, not enshrined in reality, therefore implying that the sublime would have to be found within ourselves, within our experience of the event. And the part of our experience of the event that is, by definition, veiled and unobtainable, is the trauma.*
>
> *(Clemente 2012. 182)*

Clemente's focus is on the immediacy of the attacks. But it is interesting to see how her own quest to determine the sublimity of the events of 9/11, falls foul of that sublimity. It is simply not possible to meaningfully encompass the attacks, given, as Clemente admits, that there is no available perspective from which they can be or could have been apprehended in their entirety. There is no angle from which their symbolisation can or could have been effectively completed. But more important is the enormity of the consequence that flows from ideologically determining a sublime event by conceptually reducing it to, as in this example, 'an act of terror". We are still living through the chains of consequence of just such a determination. Kant argued for the super-sensibility of reason by which the sublime can be conceptualised through the triumph of reason over an imagination numbed by the sublime event (*Kant 1979. 88*). Arguably, however, reason's triumph drives towards the absurd. Three thousand people died during the Twin Towers attack. One million three hundred thousand have perished as a consequence of determining the sublime moment as an act of terror *(PSR 2015.15*). And we are still not through. The aesthetics of sublimity are, for the most part, an academic nicety. They are also a trap in the sense that they lead only to endless

series of significations that in the end turn back upon themselves (*Deleuze and Guattari 1987.124*). What matters about the sublime is not its aesthetics but its forcing effect. We need to be aware that when we refer to the sublime, we are referring to that which obtains at the limit of human experience and which defies symbolisation (*Tsang 1998. 37/38*). The sublime, as Kant and Burke noted is overwhelmingly powerful. As Kant declared, the sublime is absolute unto itself both in terms of its magnitude and its dynamics *(Kant 2008. 81-94*). Clemente's analysis fails to grapple with the consequential dimensions of the power of the sublime; it is as though she has been blinded by the splendour of impact, and the transformation of structure into void.

One perspective that recurs among 9/11 eyewitness statements connects the attacks and the collapse of the towers to the concept of *ending. "*Something came to an end that day" (*9/11MXL*). What the something is may not always be well specified, but a sense of finality among eye witness statements is common *(YouTube 100 mns).* Other than the lives lost, and the American illusion of homeland impregnability that was clearly shattered that day, a sense that an entire historical epoch had been brought to a close, and that an unstoppable chain reaction of negative consequences had been set in motion, is also present (*9/11 aftermath*).

In general, the negative sublime signals ending, bad ending, not good ending. The sense is one of being dragged down into the dystopian or degraded. The negative sublime absents a promise of renewal or redemption. From its initial moment of shock, and across the duration of its affective tail, optimism is smothered and only the abject, the absurd and the abysmal prevail (*Berleant 2009*).

The events of 9/11 and their aftermath act as a proof point for the hypothesis that when a wholly contradictory material reality collides with a grand narrative, the sublime is produced. In the moment of the attack on the Twin Towers, the grand narrative of the impregnable super-state was undone and a profound disconnect prevailed, as everything that depended on the grand narrative being in place suddenly found itself without a home. The void that replaced the space formerly occupied by the Twin Towers, for a short while encompassed the entire Western world. It would only be a matter of time, however, a few brief months, before the abhorrent vacuum would be filled with a fitful revenge, itself characterised by blindness to its own further consequences and directed against 'enemies' the vast majority of whom had taken no part in the sublime event *(Goldenberg 2006).*

With respect to climate change discourses, it is important to consider whether and to what extent the profoundly nihilistic foreboding of a negative sublime may be acting. If it is, what are its effects; how does it function within the various discourses? Where and how is it openly acknowledged and

where and how is it felt but dared not be acknowledged? In the chapters that follow I explore these questions with my two groups of research subjects.

The sublime of climate change: hyper-objectivity.

I now turn to consider the sublime with respect to climate change, looking at the phenomenon through the lens of *hyper-objectivity* (*Morton 2013).* I want to consider *four effects of the sublime* that incidentally encapsulate the theorisations of Kant, Burke, Coleridge, Lyotard and Jameson, but which I think are revealed though Timothy Morton's characterisation of climate change as a *hyper-object*. These effects are: to render unseeing, to render helplessness, to render moral erosion, to render disconnect.

In the following, I take Morton's notion of the hyper object more as a work in progress than as a finally resolved concept. It is easily criticised. For example, in a quote that follows below, Morton distinguishes "recently discovered entities such as climate" from other large scale objects that humans have long been aware of. But why the recency of discovery lends itself to the notion of the hyper-object more than the longstanding of the Milky Way is not adequately explained. Both have caused us to reflect upon our place on Earth. To take another example: the vastness of the hyper-object is surely relative to the apprehending human observer, yet Morton sees the hyper-object belonging to a philosophy that breaks with the tradition of "*correlationism"*, where "meaning is only possible between the human mind and what it thinks; its objects…" (*Moreton 2013. 243K*). That "hyper-objects are real whether or not someone is thinking of them" (*ibid. 129K*) is a weak defence in that it says no more than the materially real is materially real. However, the concept is helpful in that it draws attention to the vastness of the scale of global climate change, the temporality of the consequences of the anthropogenic component in climate change, and its moral implications. And most especially its idea of containing us: that we are always inside an object; (*ibid. 392-398K*) that there is "nowhere to stand outside of things altogether" *(ibid.157K*) We are contained within hyper-objects, which we cannot directly perceive nor intrinsically know,

> *…hyper-objects …. are real entities whose primordial reality is withdrawn from humans…*
>
> (*ibid. 350K*)

> *..there is no exit from this situation……We realise that non human entities exist that are in comparably more vast and powerful than we are, and that our reality is caught in them.*
>
> (*ibid. 2270K)*

And yet they are immediately present to us:

> *I do not access hyper-objects at a distance through some transparent medium. Hyper-objects are here, right here in my social and experiential space. Like faces pressed against a window, they leer at me, menacingly: their very nearness is what menaces.*
>
> (*ibid. 576K*)

This sense of immediacy combined with vastness of scale renders the hyper-object something that we cannot escape, yet it is immanent, invisible and affective in Moreton's hands. Morton talks of:

> *The Kantian sublime of inner freedom giving way to a speculative sublime of disturbing intimacy..*
>
> *(ibid.1886K)*

With these thoughts in mind I turn to consider climate change in terms of its claimed hyper-objectivity.

The hyper-object is a geo-philosophical conceptualisation. It belongs to a philosophy *'that does not think primarily in terms of human events and human significance' (ibid. 217K*) This philosophy asserts the present existence of objectively real entities, whose spatial and temporal dimensions are vast; vast to the point of becoming incomprehensible to the human, and vast to the point of generating their own spatiality and temporality*. (ibid. 2662-2668K)* So vast are hyper-objects, that they are not directly apprehensible, albeit they are immediately present, immanent and of profound relevance and affect to human civilisation. Morton emphasises this latter point to distinguish hyper-objects from other vast entities that humans have either observed, thought or dreamt about since the dawn of history:

> N*aturally humans have been aware of enormous entities- some real, some imagined - since they have existed…..but there is something quite special about the recently discovered entities, such as climate. These entities cause us to reflect on our very place on Earth and in the cosmos…hyper-objects seem to force something on us, something that affects some core ideas of what it means to exist, what Earth is, what society is.*
>
> *(ibid. 360K)*

As is the case with Jameson's conception of the postmodern sublime, *we cannot stand outside* a hyper-object and look at it. There is no Archimedean point from which a hyper object can be observed.. Morton notes:

> *Hyper-objects are real whether or not someone is thinking of them….hyper-objects end the possibility of transcendental leaps outside physical reality…..hyper-objects force us to acknowledge the immanence of thinking to the physical…We know the truth- 'there is no meta-language - better than its inventors…*
>
> *(ibid. 129 &151K*)

But nor are hyper-objects directly knowable from the inside.. More profoundly, they are not wholly knowable, and this is not just because of their enormous scale. Morton draws on Harman's Object Oriented Ontology, (*Harman, 2008, 2010*) to develop his notion of the hyper-object; the hyper-object is, like all objects in Harman's ontology, fundamentally withdrawn (*ibid. 346&360K: Harman 2010. 161*), meaning that it recedes into itself in a way that cannot be followed.

The hyper-object also belongs to both categories of object, that Harman demarcates; the intended and the real (*Harman 2010. 150-157*). The hyper-object is a fundamental, in the sense that Harman positions objects and their relations to each other, rather than subjects and objects, as the fundamentals of his philosophy (*ibid.156*). Hyper-objects, in their real mode, may precede, and therefore do not necessarily conform to human cognition of them, nor are they, in any sense, exhausted by their interaction with humans or any other object. There is a simultaneous beyond/ within of the hyper-object that irreducibly escapes not only human perception but the hyper-object's interactions and relations with all other objects.

Finally, the scale of hyper-objects makes it extremely problematic, when it comes to assigning human significance and value to them. How, for example, Morton asks, can we take a meaningful moral position on an atmospheric pollutant whose emission today will affect future generations, not just of humans, but all living entities, hundreds, indeed thousands of years into the future?

> *I read that 75% of global warming effects will persist until five hundred years from now. I try to imagine what life was like in 1513. Thirty thousand years from now, ocean currents will have absorbed most of the carbon compounds, but 25% will still hang around in the atmosphere. The half life of plutonium 239 is 24,100 years. These periods are as long as visible human history thus far…….But 7% of global warming effects will be occurring 100,000 years from now, as igneous rocks slowly absorb the last of the greenhouse gasses. I have decided to call these time scales the horrifying, the terrifying, the petrifying. The last is particularly appropriate given that all that will remain of human beings in the flesh, one hundred thousand years from now, may indeed be fossils…..*
>
> *(Morton 2013.1087K)*

Let me now, drawing from Morton, briefly consider climate change as a hyper-object *(ibid.217K).* One immediate effect of such a consideration is that climate change ceases to be so much of an artifice or product of science. It can no longer be treated so much as an abstraction that is theorised, constructed or aggregated out of certain theoretically selected, empirically observed, events such as shrinking ice caps, and violent storms and so on; rather, these latter phenomena of climate change, which are directly real at the level of the human, become 'caricatures' *(Harman 2010. 156)* (snap shots or simulacra) of aspects of the greater reality which pertains to climate change, or as Morton insists, global warming, as a hyper-object.

> *Climate in general, climate as the totality of derivatives of weather events - in much the same way as inertia is a derivative of velocity - is a beast newly recognised via the collaboration of scientists, satellites, government agencies, and other entities. This beast includes the sun, since it's infrared heat from the sun that is trapped by the greenhouse effect of gases such as CO2. So global warming is a colossal entity that includes entities that exist way beyond Earth's atmosphere, and yet it affects us intimately, right here and now. Global warming covers the entire surface of Earth, and 75% of it extends five hundred years into the future.*
>
> (*Moreton 2013. 1782K*)

But we do not experience global warming. It is too vast an entity. Yes, it contains the sun and the Earth and their relationship to one another. It also contains the atmosphere, cryosphere, biosphere and lithosphere of the Earth; it contains all of the objects that go to make up these spheres, their relations to each other and their histories. It also contains 7 billion humans, their movements, cities, industries, wars, commerce, politics, endeavours, beliefs and fantasies and their relations to each other and to every other facet of the unsummable assemblage that is global warming. What little we comprehend of global warming, we comprehend as a highly abstracted process, but as Morton observes, had we the multidimensionality to perceive it, it would appear to us as an object.

> *Hyper-objects are phased: they occupy a high-dimensional phase space that makes them impossible to see as a whole on a regular three dimensional human scale basis. We can only see pieces of hyper-objects at a time……like a tsunami or a case of radiation sickness….Think of global warming; we only see snapshots of what is actually a very complex plot of a super complex set of algorithms executing themselves in a high dimensional phase space. When the weather falls on your head, you are experiencing a bad photocopy of a piece of that plot. What you once thought was real turns out to be a sensual representation, a thin slice of an image, a caricature of a piece of global climate. A process just is a real object, but one that occupies higher dimensions than objects to which we are accustomed.*
>
> *(ibid. 1274K)*

Morton stresses the hyper-object's key role in further decentering the human from its traditional ontological place of privilege:

> *To those great Victorian period discoveries, then - evolution, capital, the unconscious - we must now add space-time, ecological interconnection, and non locality*[7]*. These discoveries all share something insofar as they humiliate the human, decisively decentering us from a place of pampered privilege in the scheme of things. Non locality is perhaps the most drastic of these, since it implies that the notion of being located at all is only epiphenomenal to a deeper atemporal implicate order.*
>
> *(ibid.881K)*

However, it is when we turn to consider *the sublime* in relation to global warming, that the hyper-object truly comes into its own. The moment we accede to global warming's hyper-objectivity, we awaken to its sublimity - its being unpresentable, un-summable; its belonging to an impossible future anterior; its giving rise to feelings of '*ekstasis'*, terror, horror, bewilderment; its traumatising affect. The human suddenly finds itself caught up in something not infinitely, but immeasurably vast.

Above, I identified four functions of the sublime that I believe do have practical, immediate and profound consequences for our engagement with climate change. These go a long way to explain the phenomena of social denial and political shortfall that characterise our collective responses to what has been described by US President Obama as, "a significant and growing threat to national security" (*Obama 2016)*. These functions are: to render unseeing, to render helplessness, to render moral erosion, to render disconnect. Now consider the qualities of the hyper-object climate change, from the human perspective: it is invisible; only fragments, caricatures, or simulacra of its reality can be presented - it renders unseeing; it is overwhelmingly vast and powerful, containing as it does the entirety of the sun and the Earth - it renders helplessness; it is non local, meaning that it offers no stable background against which I can foreground my responses to it; my enjoyment of a carbon rich lifestyle today compromises lives lived now and to be lived about which I can and do know nothing - it renders moral erosion[8]; my sensible impressions of it are no match for its spatial and temporal scale, it hides behind its emanations - it renders disconnect.

Climate change's hyper-objectivity and sublimity produce the responses of unseeing, helplessness, moral erosion and disconnect among humans, even as they attempt to engage with it. It is not as

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[7] Non locality is a fundamental property of the hyper-object. Near cannot be distinguished from afar and critically, there is no 'away' to juxtapose the 'here'. This means that my action taking place within global warming is unlocatable, that is, its consequence is generalised through the hyper-object's space-time.

[8] The moral erosion may not so much be at the level of principle, but at the level of confidence in taking a position of moral obligation towards some far distant and unknown persons.

though we have a choice in the matter. To return to Longinus, it is in the very nature of the sublime to deprive those subject to it, of choice:

> *To believe or not is usually in our power; but the Sublime, acting with an imperious and irresistible force, sways every reader whether he will or no.*
>
> *(Longinus. Havel. 1894.2)*

The sublime of climate change: complexity and the Internet of Things

The word derange comes originally from the French *deranger* - to throw out of alignment (New Oxford Dictionary). As we will see below, climate change, seen as sublime, deranges its own orthodox discourse; it knocks the sense and order out of it. Morin, when talking about complexity emphasises the role of disorder (*Morin 2008. xxxiv*). The complex emerges though the interplay of order and disorder. The mode of organisation that belongs to the complex is self-organisation rather than order imposed from without. The complex is complex because it defies the imposition of an externally sourced order even as it defies predictability. The complex is an entanglement of elements, variables, functions and feedbacks, which cannot be fully mapped and over which order and predictability can, at best, only partially be encouraged.

Anthropogenic climate change exemplifies the complex. It is complicated by the interactions between natural and anthropogenically influenced climatic behaviours - it is a coupled human-natural phenomenon; it is complicated because climate itself is emergent from the multiple bio-geo as well as anthropogenic subsystems that feed into it, and are in turn impacted by it; it is complicated because its understanding is not available to science separated from understandings of human political, economic and social interests - it is transcientific (*Benessia & Funtowicz 2016. 80-92*); it is complicated through its abolition of separation by distance of the local from the global (*Morton 2013. 705K)*; it is complicated through the clashing of geological and human time scales - its progress is ultra-rapid in geological time and dangerously slow in human time *(Chakrabarty 2009.201);* it is complicated because multiple natural elemental cycles and multiple human political cycles are involved in it (*NASA 2017);* it is complicated by the contrary effects of positive and negative feedbacks within both the natural climate and human societies understood as functioning as interlocked systems *(Friedlingstein et al 2012. 102-128*); it is complicated because the sources of anthropogenic heat trapping gasses entering the atmosphere are ubiquitous across human societies and cannot be curtailed or substituted without drastic transformations to those societies

(IPCC TS4.2014. 39-40); it is complicated ethically because those called upon to make sacrifices in consumption, or make investments in the name of mitigating climate change, are geographically and temporally distant from those most likely to benefit from these actions (*Gardiner 2006.402-407*); it is complicated because its effects are related to the historically accumulated stock of heat trapping gasses present in the atmosphere and not current levels of emissions (*Villarreal 2011; Houghton 2004. 29-39*); it is complicated because of the multiplicity of socially and culturally diverse human stakeholders who have different interests in how climate change might be addressed (*UNDP 2012.43*); it is complicated because the effects of climate change are and will be unevenly distributed and have qualitatively different impacts on different human societies; it is complicated because some of the initiatives aimed at addressing climate change, as well as climate change's impacts, will have geo-political consequences; it is complicated because its enormity renders it psychologically distant. For each of the above complications there are implied uncertainties as regards the relations of outcomes to planned or unintended changes to its status quo. And none of these complications is isolated in the real world from one another.

Paradoxically, orthodox climate change discourse functions so as to drastically simplify and close down on both the public meaning of climate change, and how it might be addressed. The discourse acts as a powerful mechanism for social and political control. It does this by imposing different levels of order onto the public perception of climate change: first through its focus on the consensus among climate scientists - secondly through its insistence that the science of climate change is "settled" (*Gore 2013*), thirdly through its positioning of climate change as an apolitical issue to be determined by the science that it claims is settled, fourthly through its declaration of a scientifically sanctified 2 degrees target for global warming and fifthly through its fetishisation of CO2 as the 'enemy within" and its positioning of CO2 as the *point de caption* or central motif of the orthodox discourse (*Swingedouw 2015.137*). But the order that has been imposed on climate change through the orthodox discourse has not been imposed on actual climate change but on a simulacrum (*Baudrillard 1988.166-184*), a version of climate change that fits inside the meta-narrative of global capital (*Swyngedow 2006. 215*). And it serves to preserve that narrative because it suggests that climate change can be resolved through the commodification of its central motif.

But the imposition of a reductive, discursive order over an inherently complex socio-physical entity does not remove the complexity. It serves only to obscure it. It is rather, an act of looking away from the complexity that we sense is overwhelming; it is none other than a version of the deflection or looking away that we associate with the sublime when we first encounter it, and are overwhelmed by it.

In the end, the complexity of climate change prevails over its reductionist public discourse. And the question then arises, is the complexity of climate change so great that it defies formulation as a solvable problem in the real world?

Climate change as a wicked problem

In 1973 Rittel and Webber first coined the term *wicked* to characterise complex problems in public planning that could not be reduced to simple definitions that might then allow for clear or definitive solutions *(Rittel & Webber1973. 155-169*). Such problems have multiple conflicting inputs to them, and give rise to multiple possible outcomes that can play either for or against one another through time (*Sun & Yang 2016. 2*).

Under this characterisation, wicked problems are those that "have no definitive formulation":

> *Direct formulation is not possible with wicked-problems. The information needed to understand the problem depends upon one's idea for solving it. That is to say: in order to describe a wicked-problem in sufficient detail, one has to develop an exhaustive inventory of all conceivable solutions ahead of time…*
>
> *(ibid.161*)

"wicked problems have no stopping rule":

> *the process of solving the problem is identical with the process of understanding its nature, because there are no criteria for sufficient understanding and because there are no ends to the causal chains that link interacting open systems, the would-be planner can always try to do better…..*
>
> *(ibid. 162)*

"solutions to wicked problems are not true or false but good or bad":

> *For wicked planning problems, there are no true or false answers. Normally, many parties are equally equipped, interested, and/or entitled to judge the solutions, although none has the power to set formal decision rules to determine correctness.*
>
> *(ibid.)*

"there is no immediate and no ultimate test of a solution to a wicked problem":

> *With wicked problems, …any solution, after being implemented, will generate waves of consequences over an extended-virtually an unbounded period of time. Moreover, the next day's consequences of the solution may yield utterly undesirable repercussions which outweigh the intended advantages or the advantages accomplished hitherto.*

(ibid. 163)

“every solution to a wicked problem is a ‘one shot operation”’:

> *With wicked planning problems, …..every trial counts… every implemented solution is consequential. It leaves "traces" that cannot be undone.*
>
> *(ibid.)*

“wicked problems do not have an identifiable set of potential solutions”:

> *There are no criteria which enable one to prove that all solutions to a wicked problem have been identified and considered.*
>
> *(ibid.164)*

“every wicked problem is essentially unique”

> *There are no classes of wicked problems in the sense that principles of solution can be developed to fit all members of a class..*
>
> *(ibid.164)*

“every wicked problem can be considered to be the symptom of another problem”

> *problems can be described as discrepancies between the state of affairs as it is and the state as it ought to be. The process of resolving the problem starts with the search for causal explanation of the discrepancy. Removal of that cause poses another problem of which the original problem is a "symptom." In turn, it can be considered the symptom of still another, "higher level" problem…..The level at which a problem is settled depends upon the self-confidence of the analyst and cannot be decided on logical grounds. There is nothing like a natural level of a wicked problem.*
>
> *(ibid.165)*

“the existence of a discrepancy representing a wicked problem can be explained in numerous ways. The choice of explanation determines the problem’s resolution”

> *"Crime in the streets" can be explained by not enough police, by too many criminals, by inadequate laws, too many police, cultural deprivation, deficient opportunity, too many guns, phrenologic aberrations, etc. Each of these offers a direction for attacking crime in the streets. Which one is right? There is no rule or procedure to determine the "correct" explanation or combination of them.*
>
> *(ibid. 166)*

“the planner has no right to be wrong”

> *the scientific community does not blame its members for postulating hypotheses that are later refuted…In the world of planning and wicked problems no such immunity is tolerated. Here the aim is not to find the truth, but to improve some characteristics of the world where people live..*
>
> *(ibid.167)*

Global climate change, with its multiple dimensions and levels of complexity, has been described as wicked *(Incropera 2016. xxi)* especially because of the vast number of stakeholders involved, with their diverse interests and levels of influence over the determination of how climate change might be addressed and the diverse ways that policy consequences might affect their interests and therefore their assessments of those policies. It has also been described as "super-wicked" in that in addition to bearing all the qualities of wickedness, climate change is characterised by the features: "time is running out; those who cause the problem also seek to provide a solution; the central authority needed to address it is weak or non-existent; and, partly as a result, policy responses discount the future irrationally" *(Levin et al 2012.123).*

if problems that are characterised by extremes of wickedness and consequence are never finally solvable, then climate change is more a fact of life that has to be worked with, rather than a problem that can be solved. It can be addressed, but only to the extent that the future directionality of societies can be consciously determined: as Levin et al put it, by creating path dependencies that "constrain our future selves to increasingly climate friendly life designs" (*ibid*).

Under complexity and the constraints of wickedness, uncertainty prevails, and this precludes the delivery by science of an exhaustive body of knowledge that might serve as a basis for decision making that will not produce unintended consequences. At the very best, sufficiency of knowledge will be endlessly postponed (*Benessia & Funtowicz 2016. 90*). The complexity, the interplay between order and disorder, and its accompanying uncertainties and unknowns, will evolve and unfold through time, even as engagement to mitigate their effects progresses. Further, matters of fact and matters of concern (matters of objective assessment and matters for normative evaluation) cannot be separated cleanly from one another (*Latour.2004.231*). All of these characteristics apply to our understanding of and our dealings with climate change.

In response, science has evolved to produce an array of truth constructs based on precaution *(UNESCO 2005),* post-normality *(Funtowicz and Ravetz 2003; Ravetz 2007*), and probability calculation (*Benessia and Funtowicz 2016. 91*). These approaches seek to position uncertainty, alongside verification and falsification as the central determinants of the scientific view (*ibid*).

At the same time, science is also moving to reduce uncertainty by embracing complexity. The corporate vision of a 'smart planet" aims to achieve sufficient digitalisation of the data inputs deemed necessary for rationale decision making on multiple issues, including engagement with climate change, but only courtesy of super- computational power and strictly within the context of a continuing hegemony of economic growth and market dominated institutional structures *(ibid 99-103).*

IBM's CEO Sam Palmisano talks of "the infusion of intelligence into the way the world literally works" (*Palmisano 2008*), envisaging a world that is" instrumented, interconnected and intelligent": an Internet of Things:

> *What all of this means is that the digital and physical infrastructures of the world are converging. Computational power is being put into things we wouldn't recognise as computers. Indeed, almost anything —any person, any object, any process or any service, for any organisation, large or small —can become digitally aware and networked……With so much technology and networking abundantly available at such low cost, what wouldn't you put smart technology into? What service wouldn't you provide a customer, citizen, student or patient? What wouldn't you connect? What information wouldn't you mine for insight?*
>
> *(ibid)*

In this vision of Big Data, complexity and its attendant uncertainties submit to the power of next generation cognitive computing, such as IBM's Watson and Google's Deep Mind. Benessia and Funtowicz note:

> *In this framework, leaders of firms, cities and nations are responsible only for choosing the most effective means of techno-scientific optimisation in order for the system at stake to govern itself in the most efficient way. In other words, a radical change is taking place in the traditional dual system of legitimacy (the separation of the world of objective fact from the world of subjective concern) and its balance of forces as political power moves from reliance on scientific truth as the basis of rational decisions to delegating control to both the 'true' and the 'good' to automatised techno-scientific tools.*
>
> *(Benessia & Funtowicz 2015.102)*

However, with every handing across of analytic responsibility to machine intelligence, the human cedes to the machine the insights into the issues it seeks to resolve. And as the machine grows in learning capability at speeds far in excess of human ability, the extent of that ceding of insight can only increase.

No doubt, super-computation will allow the resolution of some of the complexities of climate change. I have argued above that in principle, such complexity and its attendant uncertainty can

never be fully resolved. Super-computation opens a door onto such complexity, but the issue is, can we, as humans, walk through, or is this a door that by definition is barred to us?

In 1991, Jameson defined his notion of the post modern sublime with reference to a technological “hyper space” in which the human would be increasingly left behind (*Jameson 1991.37/8).* The advent of Deep Mind and Watson presage that sublime. The complexities that super computers can work with are not, and increasingly will not be, directly presentable to the human and in that sense these complexities are also sublime, this time in a Lyotardian sense.

> *The sublime…. takes place…when the imagination fails to present an object which might, if only in principle, come to match a concept. We have the Idea of the world (the totality of what is), but we do not have the capacity to show an example of it. We have the Idea of the simple (that which cannot be broken down, decomposed), but we cannot illustrate it with a sensible object which would be a "case" of it. We can conceive the infinitely great, the in finitely powerful, but every presentation of an object destined to "make visible" this absolute greatness or power appears to us painfully inadequate. Those are Ideas of which no presentation is possible. Therefore, they impart no knowledge about reality (experience); they also prevent the free union of the faculties which gives rise to the sentiment of the beautiful; and they prevent the formation and the stabilisation of taste. They can be said to be unpresentable.*
>
> *(Lyotard 1984.78)*

Sublimity is understood here, to be the result of the human finding itself increasingly out of its depth and increasingly dependent on super computational processes to present resolutions of degrees of complexity (and scale) within data, which the unaided human could not deliver. The handing over of complexity to super-computation implies that the capability thereby derived is arguably super-human, and what is produced through it is, in a profound sense, post-human. If it occurs, the era in which we will live with intelligent manipulation of regional or global climates, will be post human.

Many questions arise, as the human finds itself increasingly left behind in an accelerating post human world. What might become of anthropocentrism? Braidotti speaks of yet another radical decentering of the human:

> *..if not the actual erasure, then the blurring of the distinction between the human and non human (will follow) when it comes to profiting from them……The global economy is post-anthropocentric in that it ultimately unifies all species under the imperative of the market…*
>
> *(Braidotti 2013. 63)*

What might become of the sublime? The sublime, recall, belongs exclusively to the human. Animals do not go seeking the overwhelming. neither do machines. IBM's Watson might rationally predict that a human, encountering the complexity with which Watson, itself, might be perfectly at home, would experience that complexity as sublime; but Watson would not share in the experience.

Briadotti speaks of a 'cosmopolitan interconnection' being established through a 'pan human bond of vulnerability' (*ibid*) to post human intelligences. This suggests the widespread diffusion of a sublime sensibility towards the super-human capabilities of artificial intelligences. But such a sublime need not necessarily amount to a human surrender to a post - human hegemony.

Tsang pictures the sublime occurring as:

> *an experience (that) arises in a kind of limit-situation in life, which involves our self realisation in that situation…..There are situations which a person apprehends as requiring, enabling or inviting thinking or acting at, or even beyond, the limits of his powers and abilities and which a person represents as good and important to be realised….By the sublime I shall refer to any such situation or limit and/or to our self realisation in such a situation or at such a limit…*
>
> *(Tsang 1998.32-36)*

But the form that such a sublime might take, cannot be directly ascertained, nor its consequences:

> *There seems to be a fundamental reason for our failure to represent directly the sublime. If the limit to our life, or our life at the limit, lies outside the possibility of (everyday) consciousness, then it lies outside of speech. "What lies outside of consciousness, lies outside of speech, or lies cryptically, fictively, irrecoverably inscribed within a language that both is and is not our own". (Morris.D.(1985) Gothic Sublimity.New Literary History Vol 16. 299-319)*
>
> *(Tsang 1998.36)*

Here, Tsang is alluding to the sublime's conjuring of powerful inner forces, which may not be nameable but which have transformative power. The stuff of revolution. Kainulainen develops the theme:

> *The sublime, then, can be conceived of as a force for making new meaning possible by exceeding—and thereby destabilising—limits (between self/other, possible/ impossible, foreground/background),……the sublime itself never articulates because the sublime experience is, by definition, the phenomenon of undifferentiation and the unfixing of meaning and identity…*
>
> *(Kainulainen 2013.113)*

The sublime is here seen as a potentially powerful counter hegemonic force. It may not be able to articulate a vision for a radical alternative to corporate hegemony, it may not be able to disassemble an ideology, but it can provide the impetus for disruptive change. In that sense, the sublime opens onto the unknown.

The Sapphic sublime

The idea of *absolute acceptance* of climate change has a strange ring to it. It suggests going beyond mere acknowledgement of the established facts of historical atmospheric warming and their interpretation as pointing to a destabilised future for the human collective and the biosphere writ large. Absolute acceptance seems to point towards a willingness to allow the phenomenon of climate change to take hold of our lives in a way that might be their undoing. Normally, acceptance is caveated. We do not do the unconditional willingly, as a rule. But when, as part of the research for this thesis, I asked the eminent climate scientist (anonymised as) NT, what was the core of the advice that he gave to the young whose lives will be gravely impacted by climate change, his reply was: “accept it absolutely”. Not unconditionally, note, but absolutely. NT wants young people to take climate change to heart, crucially during their formative years, so that they are profoundly affected by it, in a way that perhaps, only the young can be affected.

This is dangerous advice, and it smacks of the Sapphic sublime. But then these are dangerous times, geologically speaking, for the planet’s experiment with the human as the carrier of its reflexive consciousness.

Sappho’s is arguably the most extreme engagement with the sublime. For Sappho, there is no safe place from which the observer can contemplate the sublime, there is no moral uplift, nor rescue by reason. Neither is there alienation nor is there nostalgia or cynicism. There is only complete abandonment to the here and now, and the compulsion to risk all.

He seems to me equal to gods, that man
whoever he is, who opposite you
sits and listens close
to your sweet speaking

and lovely laughing - oh it

puts the heart in my chest on wings
for when I look at you, even a moment, no speaking
is left in me
no: tongue breaks and thin
fire is racing under skin
and in eyes no sight and drumming
fills ears

and cold sweat holds me and shaking
grips me all, greener than grass
I am and dead - or almost
I seem to me

But all is to be dared, because even a person of poverty

(*Sappho. Fragment 31. in Carson 2003*)

Longinus cites Sappho's Fragment 31 as an example of sublime writing, "but only to", in the words of Barbara Freeman, "domesticate and neutralise the very excessiveness Sappho's text bespeaks" (*Freeman1995.15*).

> *Longinus values the poem because he believes it achieves precisely the opposite of what in fact it does…….Sappho juxtaposes such apparent dualisms as life and death, hot and cold, sanity and madness, not as Longinus would have it, in order to create harmony, but rather to unsettle the notion of organic form upon which his notion of the sublime depends. Rather than unify the disparate, Sappho foregrounds the activity of self shattering. Instead of warding off fragmentation, she insists upon it.*
>
> *(ibid)*

In the Kantian sublime, as we have seen, the initial excess of the sublime moment is to be transcended by the supply of a concept of reason. In Longinus, the containment of a text's written or spoken form is the key to its sublimity. In both the Classical and the Romantic sublimes, while *"the self is led to the point of extinction"* (*Shaw 1998. 56*) that sublime still has to be foreclosed upon, either through transcendent rationalisation or through the creation of a "safe distance" from which the witness to the sublime can "*enjoy his fear*" (*Shaw 1998. 54/55*). Not so with Sappho. In the Sapphic sublime, "*all is to be dared*", and this sets this feminine sublime apart from its classic 'masculinist' interpretations. Sappho's is not a discourse of war nor domination, nor the conquest of fear, nor of nature, nor the triumph of the noble mind, nor, in Lacanian terms, of the symbolic order over the Real. There is no turn from "*being under death to being out from under death*" (*Freeman*

1995.20), rather there is the hunger for and the welcoming of dissolution. "*I am dead. And I desire death*" [9] *(Sophocles' Antigone quoted in Shaw 1998.136)* The distinction is one of profound importance, for if the sublime acts as a forcing effect within discourses on climate change, it matters hugely whether that sublime is interpreted through the masculine or the Sapphic lens, whether it is treated as an idealised sublime or as a sublime of the Real.

To consider this distinction with reference to climate change: the question revolves around whether or not that discourse accepts the irruption of climatic change through events such as major storms or heat induced regime shifts in ecosystems, as symptomatic of - that is, as an integral part of - the prevailing political economy, or whether climate change is to be foreclosed on, shut out, repressed and treated as an external or alien threat to that regime, so that climate change can be supposedly contained by the regime and the regime made resilient to it through technological intervention and innovation.

Absolute acceptance of climate change implies the former. The alternative, according to NT, is that market forces will prevail, at whatever cost that may entail.

Tsang, the sublime and finitude

Throughout this account, I have made repeated reference to the sublime as conceptualised by Tsang. Tsang observes that the sublime is encountered at the limit of human consciousness, endeavour or predicament, in what he calls "a limit situation" in which the self is realised in some new way. He identifies the sublime as occurring at the zenith, the nadir and in the fullness or plenitude of life.

> *The sublime is not something out there to be directly represented. It is concerned with life situations construed in such a way that they evoke in us an awareness of the limits of our powers and abilities and the importance of reaching or even transcending those limits as conceived. The sublime is not simply a situation in life but a situation characterised in a certain way. The person who experiences the sublime in or in relation to a situation, real or fictitious, must be aware already, or become aware at the moment, of the limits of his powers and abilities in life and of the possibility of reaching up to or even beyond those limits……it is in terms of such an idea that he can construe situations and objects around him and in him, as sublime..*

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[9] Lacan regarded Antigone's decision to bury her brother in defiance of the State Law and thereby incur her own death as a sublime act.

(Tsang 1998.37/8)

In Tsang's post Kantian version of the sublime, it is in the surpassing of ourselves that the sublime is encountered. The sublime is conferred upon objects, situations or experiences; or objects, situations and experiences are construed as sublime when they produce or seem to produce a sense of simultaneous undoing or self negation and self realisation or awakening in the witness to the sublime object. In this formulation, there is no necessary association of the sublime with scale or power, only that the object or event construed as sublime produces the effect of self realisation. And that self realisation can take many forms. It is not a requirement of Tsang's sublime that its self realisation necessarily proceeds in the direction of a moral awakening as with Kant. The sublime awaits us at the nadir of experience, just as much as at the zenith. The threat to human sensibilities, emanating from of a technologically post human market hegemony makes a fine candidate for a sublime object as Tsang would have it. But so does bearing the near weightless form of a fallen owl in the palms of one's hands.

Tsang's is the most general of accounts of the sublime. There seems to be no necessity in this account, for the experience of self realisation to be one of being euphorically carried away, as in Longinus; or of being morally elevated, as in Kant's sublime; or of being terrified or astounded as per Burke; or as spiritually revelatory as in the Romantic sublime; or as alienating and disempowering as per Jameson's post modern sublime; or as productive of deep nostalgia as in Lyotard's sublime; or as productive of feelings of insignificance and their cynical responses, as per Morton's sublime. Tsang's definition can accommodate all of these.The self may be realised in countless ways, and therefore what produces that realisation may take countless forms. In an important sense then, we can think of our everyday experiences as being contained within or encircled by an immanent sublime. The sublime is that which jolts us awake to an aspect of ourselves or our life situation, of which we were previously unaware. In that sense, the sublime is both an undoing of a previous sensibility and an awakening to a new sensibility that awaits our engagement with it.

To speak then of climate change as sublime in Tsang's sense, is to speak of finding ourselves both contained by climate change as an encircling finitude, and of containing climate change even as its altered atmosphere enters us in our every breath. But most especially it is as the presentation of a supreme challenge to the human collective that climate change appears to us as sublime in Tsang's understanding of the term. "*The person who experiences the sublime …..must be aware already, or become aware at the moment, of the limits of his powers and abilities in life and of the possibility of reaching up to or even beyond those limits..*" Climate change is sublime to us in our

apprehensions of the finitude it represents, and in the seemingly impossible demands it places on the human collective to come together in ways that defy historical precedent. And yet the challenge is not impossible to meet, would we find ourselves able to draw from that finitude its creative potential. Ruth Irwin takes up Heidegger's vision of finitude as the harbinger of new beginnings:

> *Heidegger's concern with the threshold of nihilism (is) as a regenerative force in our conceptualisation and relationship with the earth……*
> *Heidegger's approach to the zone that threatens to draw modern culture to an untimely close is not entirely pessimistic. He regards the line or boundary of the planetary conditions for human life as generating a new 'beginning'. That beginning (or contemplation of the ending) generates the conditions for rethinking what it is to be meaningfully human. So, the line of nihilism exemplifies the openness required to fully care for and love our planet and ourselves.*
>
> *(Irwin 2008.133)*

And likewise, would we take up the challenge of drawing from our own breath, the deepest of appreciations for our own lives, that impossible new beginning would seem inwardly tangible to us.

As sublime, climate change shakes us out of the sense of ourselves that we have become accustomed to, it does away with the assumption of a stable background against which our lives may be acted out, and it undoes the quotidian. In this sense as the great disrupter, climate change if opened on to as sublime, has the power to call time on the prevailing hegemony.

Conclusion: a *polythetic sublime*

The sublime may be conceived of as polythetic.

In this review I have traced the sublime from its early origins in Longinus, through its classical formulations to its Romantic phase and on through its technological phase to the present where the contemporary sublime obtains as the postmodern, the hyper-objective and the super-complex. I have also stressed the importance to the sublime of the notions of dissolution or fragmentation as in the Sapphic sublime, and the idea of the sublime as residing in finitude, that wherever the human trespasses on a life limiting situation, an encounter with the sublime awaits. I have placed emphasis on two key ideas that are central to the conceptualisation of the sublime: *the safe place*, which makes possible the contemplation of what otherwise would overwhelm, or its absence, which invites engulfment by the sublime, and the unbounded, where the sublime transgresses all limitation and escapes representation or definition. I have sought to show that the sublime travels with the human, as human cultures have evolved through time. Since culture is accumulative and continually evolves, I have argued that it makes sense to treat the sublime as multi facetted, and

polythetic, and as incorporating and able to refract all or any of the senses of the sublime that have preoccupied different writers from different times. And it should be appreciated that through its polytheticism, the sublime will go on evolving as a concept, as human culture itself evolves. It is through this open, polythetic, multidimensional sublime that I engage with my research subjects in subsequent chapters of this thesis, seeking to understand how the sublime is present within their perceptions of climate change.

Chapter 5 Analysis of the first tranche of interviews

Approaching the analysis.

Introduction

In this chapter I present my analysis of the first tranche of interviews. These interviews were conducted with the aim of assessing how interviewees constructed their perceptions of climate change, and whether they felt that the concept of the sublime, however interpreted by them, was helpful in furthering their comprehension of climate change.

The interviews were held across November and December 2016, during the very early days of the Trump Presidency and the continuing hiatus of the UK's impeding departure from the European Union. The war in Syria had reached new levels of ferocity, with daily news reports from Aleppo adding to a pervasive air of dismay and foreboding that is clearly reflected in these discussions.

The interviews were conducted as unstructured one to one and face to face, private discussions between myself as interviewer and my subjects. The interviews were recorded, with the knowledge and consent of the interviewees, and each interview lasted for approximately one hour. A full justification for this approach to interviewing is offered in the thesis chapter: *Research Design*.

Interviewees for this first tranche of interviews were selected on the basis of their previous published output relating to either the sublime or to climate change, or to both. The group is made up of academic writers and cultural commentators. They can be distinguished from the main group of second tranche interviewees in that the latter are more immediately and directly engaged in the continuing development of national and international climate change policy and political agendas. This latter group is made up of senior policy makers, policy advisors, NGO principles, business leaders and climate scientists. Their interviews are analysed in the following chapter.

Tranche one interviews acted as a preparation for tranche two interviews. As the researcher, I regarded these first interviews as an opportunity to test and develop my interviewing techniques and to test out the unstructured approach, to see if it did in fact elicit the kind of open responses that I sought. These interviews also acted as proof of concept interviews. Within the research design, they were conceived of as being there to help determine whether or not the sublime could be used as a vehicle of exploration into perceptions of climate change.

It was very important for the tranche one interviews that the atmosphere of the interview allowed the interviewee to open up and reveal their private intuitions on climate change. The unstructured interview approach allowed each interview to take a shape of its own, largely determined by the interests and concerns of the interviewee. As things turned out, each interview followed its own idiosyncratic path, but across the interviews taken as a group, some common themes emerged. These are the subject of the analysis below.

Thematic analysis by group and by individual.

I have discussed the interpretative approach taken to analysing these interviews in my chapter on Research Design and Methods I very briefly reiterate the basics of this approach. The approach applies to both the interviewing technique and the analysis of the interviews. Both are context sensitive and sensitive to my own predilections towards the sublime as an under explored aspect of climate change. I position myself as an active agent within the dialogical interview process and as analyst of the interview transcripts.

Each interview transcript was analysed in terms of themes that were important in structuring the overall narrative and its derivative meaning. Themes that were common to all or a significant number of interviews were brought together to form the group level analysis. However, a particular concern regarding the analysis of this first tranche of interviews was not to lose sight of the individuality of each interview. To that end, I subjected the group thematic analysis to trial by reference to separate interpretations of the individual interviews. Each of these, can be interpreted to produce a central narrative and derived meaning of its own. By comparing these to the thematic analysis of the whole, my aim has been to arrive at a deeper sense of how, individually and as a group, these anthropogenic constructions of climate change were made.

I treat the themes, not so much as semantic fields, that is, as sites of agreement or common meaning, shared by the contributing interviewees, but rather, as sites where broadly common ‘matters of concern’ *(Latour 2004. 231)* are discussed. So, for example, we can discover how, within the theme: *concern for happiness,* there are many different shades of concern, and versions of happiness present within the data

The dialogues

Regarding the dialogues: these interviews were conducted as far as I could make them, as free flowing discussions, rather than following a formal question and answer format. Each discussion began from a point that related directly to the interviewee's published work, and then wormed its way inwards, as it were, to touch on more private realms.

On occasion I would draw on my own research into the sublime and into climate change discourse, particularly readings on the Arctic, geo-engineering, climate change communication and complexity, to trigger or provoke responses from my interviewees.

I should also point out that the discussions should be understood as a series, wherein points uncovered in one discussion with an interviewee would sometimes form a topic of conversation in a subsequent discussion with another interviewee. So there is, to some degree, a transference of perspectives from one discussion to the next.

So there is a gradual unfolding of perspective going on. It is not the case that each interview can be treated as contextually free from its predecessors, nor, indeed, are any free from being influenced by my own interests.

I took the view that I was not there to challenge or second guess what my interviews were telling me. I was just there to encourage them in their own self disclosure. In my analysis of the data I have continued in that vein, accepting pretty well at face value what my interviewees said. So that other than assigning statements to themes and then discussing the significance of those themes, what follows are the views of my interviewees, albeit they emerged through dialogue.

The sublime as bias.

As stated at the head of this chapter, I embarked on these first tranche interviews with two aims in mind. First was to understand how each interviewee 'saw' climate change and second, was to understand what they would make of climate change when seen through the lens of the sublime. These two aims are potentially contradictory. If the expectation is set up right from the start that the sublime will be discussed, how is an unbiased discussion on their view of climate change going to be possible?

I offer two points in justification of my dual aim approach. First, I argue that there is no such thing as a 'truly open invitation' to discuss climate change, (or any other social 'matter of concern'), just

as there is no ideologically free place from which one might initiate such a discussion. Given the dominance of climate change's established framing, an unspecified (so called truly open) invitation would actually have been an invitation that was by default, an invitation to respond within the dominant cultural framing of the discourse. In the case of climate change, unless disrupted, the discourse comes ready wrapped, as it were, in a series of very well established packages. These refer first to the science, then to the internationally acknowledged targets for warming and emission levels, and then to the time horizons (pre-industrial to 2100) to which the targets are fixed, and finally to the political settlements that have been constructed, largely through the UNFCCC processes over the past 25 years. Whether one goes along with the consensus or is an outlying sceptic, one still takes one's position in respect of these frames. Whatever one decides to do about climate change, with respect to policy or personal action, this is also set by these frames. So the dominant framing exerts its own bias, although it would not normally - from within the orthodox framing - be seen as such.

But the objective here, with this research was not to restrict the elements from which my research subjects might build their views of climate change to those that can be legitimated in terms of the dominant framing. It was, on the contrary, to invite them to step outside such framing, if they so chose, and allow themselves to explore aspects of climate change that may matter a lot to them, but which are suppressed and delegitimised under the dominant framing. But rather than throw the doors wide open, as it were, given the strength and pervasiveness of these dominant frames, I took the view that one has to specify an alternative framing that pretty well demands a transgression of the framing orthodoxy. I have done this by specifying the sublime as a key dimension of the interviews I am conducting.

My second justification for the dual aim of the research is simply that I was addressing a highly educated group of interviewees, each of whom is perfectly capable of distinguishing and articulating their established understanding of climate change from what they considered a sublime view might in addition reveal. In practice, I left it very much to each interviewee to come around to the sublime point during the interview, while being aware that any points I raised, or questions I asked, were being driven in the background by my interest in a sublime view of climate change.

.

Themes

In the following, the main narrative themes are highlighted in ***bold italics***. Child categories relating to these themes are marked in plain italics

Hegemony: A great deal of discussion during the tranche 1. interviews was taken up with a general concern that, in as far as climate change is understood, described, and is the subject of policy, these understandings, descriptions and policies are entirely couched within frames of reference that take as given, the prevailing global capitalist political economy.

It is as though, for these interviewees, their thinking on climate change was fixated on its political economy. For the most part, interviewees were highly critical of the limitations that they felt had been put on their ability to 'think climate change and therefore to act climate change' because of the overwhelming, one might say engulfing, presence of the market capitalist mind set, the power of its institutions and the ubiquitous presence of its material trappings.

In trying to capture this pervasive sense of restriction, I have used the term *hegemony* - to imply a deeply embedded, society wide acceptance of the culture of capitalism. *(See Daldal 2014 for a discussion of Gramscian and Althusserian notions of hegemony. Also Bates 1975 & Rivkin and Ryan 2004. 673 for discussion of Gramsci's theory of rule by consent.)* Such is this acceptance, that an equivalence has been achieved between what is regarded as common sense, or reality, and the capitalist mindset. Through this acceptance, capitalism is felt to be exerting a totalising control over how we (we being those of us who live within the capitalist culture) are able to think and act on the issues of our times. And the matter is made worse because we are reflexively aware of the limitations of our thinking and indeed of our politics. Any critique we might make of the hegemony is of course couched with reference to it, so that even our criticisms of it, re-enforce its dominance as reality.

LT makes the point succinctly:

> *...even those that do feel genuinely concerned and would like to be part of a countering movement, find themselves very impotent in the face of the presiding hegemonic forces and socio political systems.*
>
> *(LT interview)*

And again:

> *One of the problems with political parties is that they are only what I call means ends political outfits. That is; they are vying with each other for the best way of delivering the same ends, which is basically economic growth. More stuff here, more there. More money in your pocket, …we haven't got political parties people*

> *think are worth voting for in presenting any other conception of how we're meant to live…..*
>
> *(ibid)*

> *Youthful energy, yes. But there's no sense of cultural direction. It doesn't compare to the 60s. There are scenes of course, sub cultures. But sub cultures are different from counter-culture; that has a concerted hope that everything can change…. Sub cultures assume the immovable presence of a super culture, a hegemony. There's no sense of a possible solution to everything…..it's realistic of course…*
>
> *(KC interview)*

Each tranche 1. interviewee made reference to what I am calling *hegemony.* Indeed, hegemony acts as both point of departure and background context to the preoccupations and particular perspectives of all of the interviewees. Hegemony acts as the central reference point for each interviewee's ordinary construction of climate change. Or to be more precise; the individual's sense of being hopelessly caught up in the hegemony.

This is an important finding because it suggests that somewhere along the line, the interviewees doubted the veracity of what they have been served up with, as regards climate change. This is because they know that it has been couched in terms that favour the sustainability of a political economy that they simultaneously suspect (know in their bones) to be fundamentally unsustainable.

This doubt is not the 'doubt' of an avowed climate change sceptic or denier. None of the tranche 1 interviewees was a sceptic in that sense. No; this doubt comes closer to the Lyotardian notion of scepticism towards grand narratives, a hall mark of the post modern condition.

> *from the beginning I've been a sceptic, not of climate change -*
> *what I'm sceptical about is how the narrative of climate change has been used politically…*
>
> *(QK interview)*

The sublime, because it is an aesthetic of extremes, is necessarily absent from an official discourse whose primary pre-occupation is with the reducibility of climate change to manageable categories, such as emissions targets, atmospheric loadings of greenhouse gasses, measurements of average global temperatures and responsiveness to market initiatives such as carbon pricing *(Hulme 2009.130; Swingedouw 2010. 215).* One could go as far as to say that the orthodox discourse is, perhaps unconsciously, structured to occlude the sublime of climate change. Of course, the sublime of climate change is very much alive and kicking in popular culture, where its representation as apocalypse acts as the very antithesis of its sanitised managerial version.

To be asked, then, to look at climate change by deliberately invoking a frame that sits outside of, or at the very least, at the extremity of climate change's discursive orthodoxy, seemed to come as a welcome relief to the tranche 1 interviewees. The invitation to examine climate change through the lens of the sublime seemed to act on most of these interviewees as a kind of escape valve for their frustrations. Below, where I introduce the sublime as a theme of these interviews, I open a discussion (to be taken on towards the end of this thesis) on the potential of the sublime to act as a counter hegemonic perspective on climate change.

Neoliberalism: Implicit in some instances, explicit in others, what the first tranche interviewees treat as hegemonic is what they call the neoliberal settlement. Neoliberalism is the dominant policy paradigm among Western capitalist societies. Into its orthodoxies are fitted, not only economic, but social and environmental policies, including policies aimed at addressing climate change *(Meckling & Jenner 2016*). Within the paradigm, the liberalisation of markets and the eulogisation of economic growth have become ends in themselves, and are ethics in their own right. Critical to the functioning of neoliberalism is the reduction of value to number. Only once a number has been assigned as a proxy for value can an object (of value) enter the market and be processed (weighed by the preferences of individuals) to produce, what to the neoliberal, is a rational outcome. In neoliberalism, climate change is understood as a market failure (*Stern 2015. 347K*); the unintended result of the global commons and industrial pollutants not being adequately monetised in times past. For neoliberalism, climate change is an externality. It can only be addressed by bringing it into the market (*Meckling & Jenner 2016*). For neoliberalism read; nature reduced to number. But for my interviewees, the reduction is not working…..

> *under neoliberalism all problems can be administered if they can be enumerated, usually through money…..what Grotius is saying…that under communism…you administer problems with politics, you administer through language…you define problems through language. In this system (neoliberalism) you define problems through money.. it's a binary approach, but the language of money and number has supplanted the discursive (in neoliberalism)*
>
> *(DT interview)*

> *The whole numbers discourse is not doing what it promised to do or is expected to do to save humans from suffering.The quantification of the problem through enumerating it is a way of administering it, but its not working. Also apportioning money is a way of administering problems. But neither money nor any other kind of enumeration seems up to the task.*
>
> *(ibid)*

> *there's been an externalisation of climate change..the way its been presented especially in the UK that its an external enemy, a bit like an asteroid coming to destroy the world and suddenly here's climate change and we have to act now, now….*
>
> *(QK interview)*

> *Jeremy Corbyn takes climate change seriously, but then its very quickly turned back into a discourse about jobs and growth. So I think the green critique could be much more fundamental, opening up a conversation about social structures and happiness, but climate change, in the way it is being discussed, blocks that out.*
>
> *(NS interview)*

Targets: arguably the two degrees of warming target is the anchor, or *point de capiton* (quilting point (*Ross 2002*)) of the orthodox climate change discourse. It is the central point of reference, without which the orthodox discourse would, in a sense, fall apart. But the target does more than hold the discourse together. It acts to constrain the discourse and anchor it to a technical vision of climate change that belongs fairly and squarely within the neoliberal hegemony.

> *Climate change became a problem in 1992 when UNFCCC said there is a dangerous level of climate change. In their policy world mainstream discourse, in the Enlightenment mind, it wasn't constructed as a problem until it had a target attached to it. If you took away the idea of a target, all narratives of climate change would collapse.*
>
> *(DT interview)*

> *Anything you hear about climate change is because there is a target as a form of social control.*
>
> *(ibid)*

The machine: a term taken from Western popular culture (*Ellin 2000. 268*) expressing a sense of being trapped within an all embracing mechanism. The term is also used as a metaphor for the ubiquity of corporate capitalism. From incubator to incinerator, our lives are mediated by *the machine*; we are subject to its goals, its rules and its ethics, which appear to us to be of its own making, and not ours. *The machine* rules and we are its alienated slaves. The machine surrounds us but also reaches inside us. We are its cogs. When all the cover stories are stripped bare, what is revealed is *the machine*. We feel that all we can do is submit to it or rage against it. To feel human in 21st century Western society, is to rage against *the machine*, knowing the futility of that rage. (With acknowledgements/apologies to the US rock band; *rage against the machine*)

With those interviewees who had declared a particularly strong sense of disenchantment with the prevailing hegemony, I introduced the term *the machine* to signal to them that I was on-side with their sense of alienation and entrapment. It was a signal to them to further drop their guard and open up, and *rage* if they so wished.

> *…..when it comes down to it, this system that I'm in, this machine, it destroys my capacity simply to be alive…it's driving me incessantly to always be chasing this other…*

(NG in OPK interview)

you see mindfulness really taking off in the Anglo Saxon capitalist states…..Growth growth growth, work until you're dead. People getting depressed and unhappy and then that can't work any more. Then you have nice mindfulness units being sent in to cure them, so they can get back to work again..So what could be a powerful source of inner transformation is being used to keep the machine working…

(QK interview)

..if we're just going to be bundled along by some weird devouring machine, then we're going to be taken further and further away from that point. We're going to have that..my individual power as a creator of reality… finished through my particular enslavement to that process that I find myself in right now.

(OPK interview)

the other reason it seems so absolutely hopeless… (inaudible)… for individuals to try to sustain action that flies in the face of what we are told we want, is the power of corporate capitalism…I think a lot of people would opt to work less, but corporate power has got us by the (inaudible) …The greed and selfishness of that regime has kind of managed to monopolise the world in a way that making more money has won out to the cost of everyone else's well being….

(LT interview)

The machine relies on people being anxious, detached, alone and fearful..that makes the economy grow. To a large extent, late capitalism feeds off anxiety people desperately trying to escape from themselves. That sells very well because they are unsatisfied.

(QK interview)

Ideology of the individual: at the moral heart of hegemonic neoliberalism stands the individual competitor. The individual competes in the market to appropriate value, either as a buyer or seller. In neoliberalism value is weighed in the market by individual preference. The collective is deemed to be reducible to individual choice of action. The language of individualism, typified by the term life choice, marginalises notions of the collective, the cooperative and the social. But climate change is perhaps the ultimate contradiction of this ethos.

Humans are flawed. They'll cut corners and this and that, and that's why we need regulation..Saying, 'we are going to change climate change by relying on individuals' is like saying 'we're going to change tax regulation by relying on honest bankers'…So we can't rely on me not flying,…the ideology of the individual makes it completely impossible to change anything fundamentally….

(QK interview)

Post-politics: in a sense, politics has been reduced to a contest of management styles to deliver the hegemonic goals of neoliberalism. There is an absence of a real politics of genuine debate that would open the door to fundamental societal change.

> *everyone from Tony Blair to Cameron to the Pope and George Bush said this was serious, we need to do something and that's where I became deeply suspicious that if this is something where there seems to be consensus within centralist politics ..but what actually is it? Part of the problem with climate change is that we haven't actually worked out what the concrete problem is..we know that CO2 is very serious but the responses don't measure up to it.*
>
> *(ibid)*

> *It's that depoliticisation; when you stop looking at the wealthy and targeting them and laying the guilt on working people..these people are doing what the rich want them to do, which is to keep consuming. That's the problem; that we have an economic model that says buy, buy, buy, and they're just doing what they're being told to do . But the horrible thing is that in capitalism, you have to keep buying things. But then the climate change produced by the capitalism makes you feel guilty about it ..So its a pathological society of excess and guilt that is the real issue. …….. poor people keep the economy going by buying these cheap mass things, while the rich hoard and hoard and the concentration of wealth increases…So to try to solve the climate change problem within that kind of framework, I don't see any way of doing that..*
>
> *(ibid)*

Gesture politics; post-politics is a politics of gesture rather than substance, with respect to climate change. The interviewees tend to take this view because of their scepticism regarding the hegemonic presentation of climate change as a problem that can be fixed within the neoliberal paradigm.

> *The contradictions in climate change politics are vast,. You sign up to mega agreements like Paris, but then, on another agenda altogether, you agree to a third runway at Heathrow. So you attend to the future in one sense, and turn a blind eye to business as usual in the present. The big global agreements are gesture politics. A third runway at Heathrow is real.*
>
> *(NS interview)*

> *There's a paradox…there's this terrible thing (climate change) and the solution is building nuclear power stations that take a very long time to build, and can't be built in time…*
>
> *(QK interview)*

Marxist critique: Three of the tranche 1 interviewees overtly form their views on climate change using Marxist or neo-Marxist frames of reference. The group as a whole can be taken as left leaning progressives. There is little sympathy expressed by any of them for the capitalist hegemony, and yet each of the interviewees, (myself included) in one way or another, enjoys the spoils of that system. In the interviews, the focus is almost exclusively on what the system gets wrong, not what it gets right. This might be excusable, given the subject of the interviews - perceptions of climate change - but the interviews also present a sense of guilt or a sense of grudge at being so well cared for by the very society they are so critical of. This is very hard to

capture in a text extract, but as interviewer, I became increasingly aware of the underlying presence of some such unease.

> *one of the problems for me, my Marxist background, I look at environmental problems as a consequence of the contradictions of capitalism, which needs to have 3% compound interest growth for ever and ever. And to create the profit to do that, you undermine the conditions of production of capitalism. When Marx was writing about this, the contradiction was in terms of workers. You want to get as much profit as possible from these workers so you make them work and work and work; babies working. But then everyone gets sick and dies and there's no one left to buy anything. So the rate of profit declines. Similarly we have this growth, growth, growth, using up resources and polluting and one of the contradictions of capitalism in terms of nature is we've emitted a lot more CO2 than we needed to. And we haven't done something about that, because the primary goal is accumulation..for accumulation's sake, as Marx said, production for production's sake..*
>
> *(ibid)*

> *What really is this problem… It's not something that's going to be solved in the mindsets and paradigms or ways of thinking and feeling that generated it..*
>
> *(DT interview)*

> *if how we live neither particularly delivers happiness and at the same time is destroying the environment, that might lead us to think about how we might redesign our societies rather than heading off or fixing climate change within the existing paradigm.*
>
> *(NS interview)*

De-growth: not all interviewees explicitly advocate de-growth as integral to addressing climate change, but some do. For the others, de-growth is implicit in their hostility towards the neoliberal hegemony. De-growth is not necessarily a retrogressive or fantasist philosophy as the extracts below indicate. But none of the de-growth apologists offer anything other than a most tentative pathway to de-growth, other than through collapse of the growth paradigm. But climate change, considered from a de-growth perspective might open up such a political discussion, if it can be wrested from the clutches of the neoliberal interpretation.

> *I would want to say that we want to shift the way we consume and the way that we live and at the heart of that there's a reduction of work, a de-growth political economy, against the political economy that has growth as the main economic activity.…in which we committed to a much more reproductive provision of material needs, expansion of free time, reduction of work, a basic income of some kind for everyone and you know, an expansion of free time, which could be used, obviously in a variety of ways …*
>
> *(LT interview)*

> *if you mentioned de-growth in economics five years ago, you'd practically be put into a straight jacket.…People thought it was completely barmy, but at least it's there. People are beginning to talk about it … Jeremy Corbyn has shown some interest in alternative economics, so there is a whole network, and it's an international network. But of course it's a small alternative among social movement networks. …But it's there, and it wouldn't have been there at all 20 years ago*

(ibid)

> *If we think that our current way of living will render the planet uninhabitable, and I do think that is the case, then you could argue that climate change is a good figure for raising that question… That might lead to a discussion about the future role of states forcing reductions in consumption, for example, or other required shifts in behaviours that would otherwise be difficult to take..*
>
> *(NS interview)*

Desire: In these first tranche interviews I introduce the concept of desire as a means of opening up a conversation on the deep entrenchment of the prevailing hegemony, and what it might take to overcome it. My approach to desire is based on previous readings of Lacanian theory.

> *What are the characteristics of desire? What is its nature? And some people think that the very nature of human desire is that as soon as it alights on one thing, if it thinks it's going to be satisfied, it hops on to the next..If desire isn't always elsewhere, then something calamitous would happen. And whether this is true or not, if that is a deep seated aspect of being human, then a system which rides on the back of that, very nicely - thank you very much - is the capitalist market consumer way of living. And if you take that view of desire, then capitalism is incredibly deeply entrenched, and it would be that much more difficult to remove it, unless, in one's alternative vision, one embraced this view of desire and made some provisions for it.*
>
> *(NG in LT interview)*

> *These are very serious reservations that you are raising, if one is thinking of an alternative order. I suppose that when desire gets talked about in this kind of way, people are often perhaps over focussing on the material culture of consumer society, as the object of desire is to consume new things, essentially as material entities, and certain kinds of services. And not enough attention is focussed on what might be possible in terms of building more baroque, complex, ever more aspirant forms of spiritual, for want of a better word, satisfaction or artistic satisfaction, or recreational pleasure, or doing crafts, of gaining (inaudible)… and playful times, let alone thinking about the new forms that might emerge, if we had much more free time..*
>
> *(LT interview)*

NG. *what he's (Lacan) trying to understand is the nature of desire!*

OPK *Pfahh! good luck to him..!*

NG. *And he is saying, we have to have desire!*

OPK. *Oh yeah!*

NG. *And the nature of desire is that because its fundamentally, because we're cut off from that primal unity, that primal interdependence, we're ordered out into the world, so we long to return. But we can't. So the nature of desire is that it looks in the world, and the most important thing about it is that it's never satisfied…as soon as it feels it's satisfied it moves on..*

OPK. *And capitalism has learned that.. A constant state of agitation! Capitalism has learned that or it's picked it up, whether it has consciously learned that, or not. And it rides on it.*

> NG. *Yes. So then you have a vast economic socio cultural system that has engulfed the world, riding on this thing which is profoundly powerful; riding on this desire..,*
>
> *(NG &OPK in OPK interview)*

the sublime*; the sublime* ranks highly as an organising theme, pretty well on a par with *hegemony.* This can partly be accounted for because of how the interviews had been framed. However it is significant that often, the sublime is used as a potential counterpoint to the hegemonic understanding of climate change. This is a significant finding. If we refer back to the hegemonic view, then, as for example described by DT, under neoliberalism, value has to be assigned some kind of a number before it can be weighed in the market place of consumer preferences. However, the sublime, I would argue, resists such enumeration because it points at and refers to that which is immeasurable. It can therefore act as a counterpoint to the hegemonic view. In other words a sublime view of climate change can, in some senses be used to challenge the prevailing hegemony. I develop this argument more fully towards the end of my thesis. However, as the following excerpts make clear, a sublime view of climate change opens up many different vistas. The aesthetic of the sublime may be an imperfect tool for comprehending climate change, it is nonetheless powerful.

During the interviews, it became clear that the sublime was conceived of rather differently by its academic specialists , compared to the other interviewees. The specialists refer by default to the Kantian sublime. When I introduced the theme, I too would defer to the Kantian, but also discuss the sublime from a post modern perspective, drawing on my interpretation of Lyotard's and Jameson's versions of the sublime. Non specialists would use the sublime to mean something verging on the divine, or a secular version of the divine; a sense of being in the presence of a transcendent, or a profound immanence, and therefore of feeling overwhelmed or deeply moved. Given that this popular interpretation of the sublime is its most widely used sense, I suspect, but cannot be sure, that in actual fact, during the interviews, the experts who used the term, were to some degree, referring to both senses of the sublime.

One very interesting feature of the discussions on the sublime is the distinction between the Kantian or classical sublime and the contemporary postmodern versions. In the classical version, the sublime is viewed from a safe place; the observer is somehow outside the awesome phenomenon taken to be sublime. In the contemporary sublime, that external positioning disappears. One is already within the phenomenon one beholds as sublime *(Morton 2013. 2270K; Jameson 1991. 47/8).* When, in the interviews, climate change is discussed using the sublime as a

frame of reference, how one sees climate change is radically altered, depending on which vision of the sublime one adopts.

Looking into the crater - (reference Turkmenistan oil blow out) it was very beautiful. One of the two or three visual experiences of awe…fright, wonder, fascination. Meaning comes a long way after….It resonated with the knowledge that we've been on this track of slash and burn since neolithic times…

(KC interview)

Part of the sublime narrative of disaster is the last minute heroic rescue (by technology) but I don't think that's particularly helpful either. Technological wizardry will no doubt play a part - storage systems for renewable energy and so on will play a big part. Two things make me uneasy about it; one is that it can't be fixed by technology alone, its not just a technological issue, its about levels of production, consumerism and the throw-away society These are all issues that are not particularly technical (or at least not essentially technical) issues about what actually makes people happy and how well capitalism can provide for that….its about economics not the disaster narrative…

(NS interview)

…it would be better to think about what would make a nicer world …it would be easy to make Brighton nice, just stop people driving in it. And that actually may be a better way of thinking about it than the sublime.. incrementally making the world nicer.

(ibid)

In Kant it's the pleasure of the sense of the human mind overcoming the power of nature, which has supplanted God…The sublime challenges the authority of the divine. The sublime comes with the death of God ..In a funny sort of way, what I'm saying is that the sublime is part of the problem. …Because we thought we were the kings of nature, we could stand on the parapet, this bourgeoise gentleman in his suit, commanding the whole of nature and usurping …That's one way of thinking about the 18th century development of the sublime and why it comes in at the point of the industrial revolution. And it becomes a distinctive aesthetic experience which involves some pain and fear as well as pleasure..

(LT interview)

LT. *but later on in the arguments of Lyotard and Lacan, with climate change you're emphasising more the immensity and what we can't handle with it being ..I mean it doesn't give an aesthetic pleasure..*

NG. *Well the question then arises could it ,and what would it take for it to do that?*

LT. *I can't remember the name of the artist who summons these terrible scenes of destruction (think Goya, Fasbinder, Chris Shaw Hughes, Jake and Dino Chapman. NG) mainly, not so much to do with climate change but with the war in Iraq, who aestheticises destruction….*

NG. *I am addicted to watching channel 4 news at night, I'm addicted to watching hell in Aleppo and there is a horrific beauty…*

LT. *So there is an aesthetic to destruction. Do you think people are enjoying the sense of nearing apocalypse ? I think it can be an element in what we're calling desire …maybe it comes back to my argument…a lot of people are bored, life doesn't offer enough.*

NG. *Somebody said to me, in the end when we got down this particular route, he said, climate change…bring it on…because it had this…*

LT. *excitement…like war.*

NG. *He said it would suck the change out of us, and that would be beautiful and extravagant and exciting, instead of the vacuous tedium of pretending that another chocolate doughnut is going to do me some good…I mean, it's an awful aesthetic, but it's there.*

LT. *I agree, it is there and it's insidious*

(NG & LT in LT interview)

climate change and the sublime; its a very complex thing…more than double edged. To the extent that it drives narratives of impending disaster, it can engender arguments about how we should be living as a counterweight to the negative 'bring it on'. And the fact that we do sign these big agreements does open up the possibility that we might actually do something about it..

(NS interview)

the sublime is a very useful heuristic device but I don't think it does all the work….there are other questions… intergenerational solidarity.. we need ways of bringing that unseen event into our daily lives…

(ibid)

Safe place: In the classical Kantian version of the sublime, the notion of the *safe place* is pivotal. It is only from the safe place, that what would otherwise be overwhelming and possibly consume our lives, can be looked on as sublime. It is the safe place that produces the sublime effect. The safe place holds the overwhelming at bay, and keeps it at a safe distance. In other words the safe place creates distance. So when we view climate change from what we take to be a safe place, we throw it into the distance. In the extracts below, DT argues that the effect of determining CO2 emissions and global warming targets under the UNFCCC, has the effect of creating a safe place. Taking that point forward, the safe place then produces a sublime vision of climate change, which as NS points out, we can't take seriously. But if we follow KC's point, there is also deep enjoyment to be gained from contemplating the horrific from what we think is a safe place. This 'troubled pleasure' is what we gain through the aesthetic of the sublime (*Soper 1990. 3*).

As previously noted, in contemporary visions of the sublime, we are already engulfed within that which is of the sublime. Jameson's vision of global capitalism *(see Ch4)* is a case in point. We are likewise contained by global climate change *(Morton 2013.2270K*). Because we cannot stand outside of the physical reality of climate change, no classical *safe place* is available to us. What we

have instead is *the illusion of a safe place.,* an interiorised distance created by our capacity to conceptualise climate change in terms of future emissions and warming targets.

> *of course the sublime is viewed at a safe distance, and in as far as this awful threat exists in the future, the sublime makes the present, the place from which we might view that future, the safe place. And this is not at all good. Climate change is then a bit like dying. We're all going to die but in as far as we remain healthy, even as we get older, death is not an issue. Of course if you get really ill then its a different matter. So climate change is a bit like that. But the sublime effect would hold climate change at a distance, so you don't really take it seriously, like your own death…if you're healthy.*
>
> *(NS interview)*

> *Ambitious targets and so forth don't solve climate change, they deliver us a safe place in the sense of a precipice which we mustn't fall over……..So regarding the sublime, if you get rid of the targets - the construction - what's the reality behind that?*
>
> *(DT interview)*

> *Going to a gallery, the viewer is being brought to the edge, as it were, - to the edge of the knife that wounds the planet - to witness in safety, some of the deeper shit that's going on, through an installation or artwork.*
>
> *(KC interview)*

Postponement: in the sublime construction of climate change, the safe place from which we can view climate change is the present. Then the distance created by the sublime effect is essentially temporal. NS's observation about the sublime construction of climate change, the creation of an illusory safe place in the present, and the casting of the threat into the future, is profoundly important. Likewise is QK's observation, where he sees the present, not as the safe place from which to project a dark future, but as the seat of a profound reality that entirely escapes us when we are caught up in future casting.

> *...climate change, for so many people, is still in the future. And possibly a kind of receding future..people like to think it can be pushed back. And I think that possibly this kind of thing gets tinged with a belief in a possible technical fix …We've always managed to cope with disasters ..There have always been doom laden pronouncements going on about the state of the world …and somehow we always found coping strategies. In a sort of way, there's a certain kind of reluctance to confront the necessity for instantaneous action, because it's not going to hit tomorrow; it's not necessarily going to affect my generation. And maybe we'll find a whole lot of solutions in time anyway.*
>
> *(LT interview)*

> *We live in our minds all the time so we're not really conscious of the present moment that connects with this oneness. I'm sounding new age…People are so caught up thinking ahead, we're never tuning into the oneness that's so beyond..*
>
> *(QK interview)*

Deflection: deflection is central to the classical notion of the sublime. We are confronted by the overwhelming. For a split second we glimpse the real. Our first reaction is to look away. This is too much to bear, too horrible. This cannot be true, it's too crazy. I can't look at it. But then, the second phase of the sublime kicks in. Well yes; I can look at it, if I consider it as…and I conceptualise what overwhelmed my imagination in the first instance. I reduce the real to a symbol of itself. So the deflection, the not looking at, signals to us that a sublime effect may be operating. Detecting a sublime effect then becomes, in part, recognising that such and such actually functions as a way of deflecting or compensating for the full enormity of the phenomenon before us.

> *Naomi Klein; she starts off.. 'I look at this thing, then I turn away' . There's a deflection going on. Then she decides she's going to have to look at it, and gives her account of the construction of denial …But there's more to this deflection than deliberate denial. Then you see in mythologies from all countries, there's always something that you can't look at…Icarus can't fly too close to the sun….*
>
> *(NG in DT interview)*

> *How is it structured that we can't look at it? And therefore what ARE we allowed to look at? If you then look at neoclassical economics; the whole model is a device to stop you looking at it…You can look at it THIS WAY, so you can cost and discount it. So you can come at a certain construction of it. But it's nothing to do with physical realities, nothing to do with human suffering…*
>
> *(ibid)*

> *As soon as you start using symbols to mediate the world, those symbols stand between you and the world. and you can never really experience the world. You can experience a symbolic version of it..Its difficult to try to propagate these ideas. But they're all around. Trying to get past this idea of a limit for climate change, but then you can't put it in words or you'll kill it…*
>
> *(DT interview)*

> *to look at something such as climate change and say 'this is the way to solve this' through..cutting carbon emissions, through..putting solar panels on our roofs is completely insane….because we are not addressing the fundamental basis of its cause.*
>
> *(OPK interview*

Apocalyptic thinking: in popular culture, and in some scientific assessments, climate change has been presented as more than a global scale threat; it is a threat of such enormity that it could spell the end of human civilisation as we know it. In 2004, former UK Chief Scientist Sir David King, argued that climate change could render much of the Earth uninhabitable for humans at some future point, if 'business as usual' emissions scenarios prevailed until 2100 (*King 2004*). Regardless of whether such claims continue to command widespread scientific support, when they have been issued from highly authoritative sources and have received such extensive media cover, they enter popular consciousness and are translated into apocalyptic visions. These visions then create a market for cultural works that play to them (*Time 2011*). A key dimension of apocalypse is its all but inevitability. But in the sublime narrative form, the slimmest of chances of avoiding

impending doom is provided for, through the last minute intervention, just as all seems lost, of a heroic rescuing force, or through the all but impossible survival of a handful of chosen few. If survived, the apocalypse is a purging force and gives rise to notions of post catastrophic utopias *(Beck & Dorrian 2014*). The apocalyptic narrative is most usually set in the future or as belonging to a mythical civilisation (*ibid*). Either way, to the extent that climate change is held in popular consciousness within the apocalyptic narrative, it is ultimately nothing to worry about. Right will prevail.

> *It's only in the 20th century that humanity has become able to destroy the whole planet. But if science is saying we're heading for disaster, does that mean people are adopting millennial views because they think we've had it? And is this eroding the sense that we can, rightly or wrongly, do something about it? So the sublime effect here, if it drives millennial thinking, is profoundly negative and debilitating, if there's an internalisation of we've all had it… So if the discourse does generate this effect, then why should I bother doing anything about it….like, if I was told I was going to die in 5 years, then I'd just go out and try to enjoy those 5 years.*
>
> *(NS interview)*

> *We're really in very fucking deep shit. But because of the deep peril that we're in, we have the potential to do something extraordinary that we've never done before. And I do believe that with all my heart ..But I don't think any of us know how that will happen ..We're waiting for climate change to hit..It's very hard to force the rethink - the reimagining …maybe that is what it will take; maybe because it seems to me that the only hope, real hope, of any change is climate change, perversely,*
>
> *(OPK interview)*

***Societal breakdown**:* the threat of societal breakdown, or indeed its prospect, forms the third major narrative theme of the first tranche interviews. Societal breakdown differs from the apocalyptic vision in that the theme does not carry a sense of sensationalised inevitability. It nonetheless links to the idea of the sublime through the possible scale and rapidity of such collapse. However, societal breakdown can be avoided. Indeed, if we follow the views of JB, civilisation has always been in danger of collapse, and is in perpetual need of being renewed and protected. So the issue is building resilience. OPK takes the view that resilience requires a radical social rethinking and re-structuring, so that the acknowledgment that we ourselves pose a threat to our own survival is placed 'fare and square' as the basis of a remodelled resilient society. But, in this view, we are a very long way from collectively making that acknowledgement.

How might societal breakdown occur as a result of climate change? Primarily, in the first instance, through commodity price hikes due to crop failures within regions despoiled by environmental

collapse associated with climate change, and their economic and societal knock on effects. The Arab Spring of 2012 is widely held to have been triggered by rising prices of basic commodities consequent upon harvest failures and further diversification of crop producing lands into bio-fuels production, although many other factors were present in the mix (*Johnstone & Mazzo 2011; Kelly et al 2015. 3242*). Although the association with climate change is hotly contested, the war in Syria was preceded by a ten year drought in the north of the country that forced mass emigration to cities and more fertile regions of the country, which in turn exacerbated pre-existing local ethnic, clan and religious rivalries (*ibid*). Erosion in the price of oil futures, through the phenomenon of stranded assets negatively impacting the stock values of fossil fuel corporations, could lead to market failures where major investors remain blind to the risks associated with stranded assets (*Caldecott 2017*), although the simple stranded assets argument is disputed for failing to adequately take account of how corporate assets are priced (*Helm 2015)*. The mass displacement of peoples from Sub Saharan and the Horn of Africa, where environmental failures linked to climate change have triggered local violence and then propelled mass long distance migration is already being witnessed in the Mediterranean refugee crisis *(Gonzalez-Garcia et al. 2016)*.

Many commentators take the view that the effects of climate change on human civilisation will be felt most dramatically and urgently through the threat of societal collapse, rather than through direct environmental threats *per se (Nuccitelli 2017; Price 2017).* Such threats link to our sense of the sublime through the unthinkable loss and suffering that a generalised societal collapse would entail.

> *Civilisation is a flickering flame that can so easily be blown out…it's perpetually in crisis. That's why the prophets of the apocalypse are always right. This thing will end. All things will pass, so better to pass a better way…as a religious person, you want to come out able to look God in the eye*
>
> *(KC interview)*

> *..and the forces of neofascism that are emerging, signal the emergence of a much more tribalist world. It's worse in a way; people are comparing now with the early 1930s, with Germany and so on, which is fair enough. But this is a global phenomenon. So in a sense, if it is to be compared to that kind of thing, then this is very much more alarming.*
>
> *(LT interview)*

> *If Syria is the warm up act, this is where we see that capitalism and fascism are two sides of the same coin. In certain points in history, they need each other…. the rich are not going to give up their concentration of wealth easily, so they will need states that are propagating fear and making people hate their neighbours. Because if they stop hating them, they'll start hating the people with the money. And that's when it starts getting dangerous for them…*
>
> *(QK interview)*

> *With respect to climate change; there are going to be terrible weather events and a lot of displaced people, a lot more insecurity. So lots of nuclear plants on the coasts*

of disintegrating warring states fighting each other over scarce resources. I don't particularly like the sound of that. And when you combine the environmental consequences of nuclear disaster with climate change, you could have a nexus of quite serious issues.....So it's not so simple as saying climate change is here, nuclear is zero carbon, therefore we need nuclear power.

(ibid)

Such a system would have to put our survival right at the base of everything. And at the moment we have our defence at the base of everything, but we don't have our survival. Because we just naturally assume, it'll be ok, as it was for our fathers, as it was for our grandfathers. There might be the odd war, there might be the one-off famine, there might be the odd virus that comes and takes out some of us. But for the first time we're looking at a scenario where potentially we could not be ok. And therefore I think that a new system would have to have human survival welded to the very base. And this system that we have doesn't have that. .So there is no safety net because there is no cultural understanding what that might mean,. In a practical sense that means we have to re-write everything we have in terms of our relationship to the environment. And that work hasn't even been begun.

(OPK interview)

Moral damage: Closely related to the idea of societal collapse and perhaps acting as its precursor here in the West, is the potentially fatal moral damage that may be done to Western cultural values, caused by our inability to respond to societal collapse in more climatically vulnerable parts of the world. An important context for these interviews was the war in Syria, and prior to that, media cover of the continuing exodus of refugees and Europe's response to that exodus. In several interviews, I put forward the view that the West's failure to engage meaningfully, in the Syrian crisis, even at a humanitarian level, was a moral failure. And since that moral failure was being carried out in my name, I was carrying some of it too. The question I was asking was, Is this failure to mediate conflict and to succour refugees, a preparation for how the West will deal with the inevitable conflict and forced migrations that climate change will impose upon the world? And therefore, to what degree does climate change, or its prospect, erode the Western moral humanitarian stance? KC agrees the threat of such erosion is real. But he is simultaneously sceptical about the usefulness of across the board moral pronouncements, because all humans, as he sees them, have an innate capacity to compartmentalise the moral, and make selections as to what will count for them and what will not. In other words, when it comes to political practice there is no Western moral homogeneity despite assertions to the contrary. LT, on the other hand already sees the writing on the wall.

NG…with climate change, we can foresee billions on the move. So are we rehearsing for the lifeboat; walking away from the whole structure of human rights? KC. Yes, you're right. The Cormack McCarthy book speaks to that. Every man for himself. (ref The Road) But on morality, I'm not sure I agree with you there. Hypocrisy is a constitutional human failing. I'm ok to accept that in other people, but we do make compartments and we always will. These categories allow for my compassion - Aleppo yes, Gomo no. We wouldn't know how to focus our distress on distant cultures.

(NG & KC in KC interview)

> *We're going to have to push more boats, with more ecological migrants, back into the water. The consequences for the whole idea of human solidarity are, for me, very frightening. You know the Enlightenment ideal never worked that brilliantly, but it kind of worked. The whole notion of human rights being universal will have to go. We will no longer recognise the kind of morality that. (inaudible) I can't see how any of that can survive , we will become much more tribalist again.*
>
> *(LT interview)*

Existential exploration: one of the most important findings from this research is that when people are invited to talk about how they see climate change, and that invitation is couched within the framework of the sublime, climate change becomes linked, somewhere along the line, with a sense that as individuals and as a society, it is how we are living, or what we take our lives to be about, that is at the root of climate change. It is as though, thinking about climate change via the sublime, amounts to asking ourselves some very deep questions about what it is for us, as individuals, to be human. It is also, somehow, that through climate change, the planet is demanding a profound response to such questions from us.

But perhaps we should not be overly surprised by this link between climate change and existential questioning. In the classical Kantian formulation of the sublime, the one who beholds the sublime feels himself ennobled when he finds himself (and in those days it would almost certainly be a 'he') in the presence of that which he takes to be sublime within nature. In other words the sense of sublimity works both ways. It is conferred upon the object taken to be sublime and simultaneously conferred upon the witnessing subject, who in Kant, is awakened into inner freedom and positioned thus to act as a moral being (*Brady 2013. 61*).

> *The greatest gift of being human is that we are creators of our own reality … we have that gift, no other species can create reality to the extent that we can. And therefore it is that, more than anything, that we have disavowed or been unconscious of ..If we accept that we are creators of reality, then it gets much more interesting.*
>
> *(OPK interview*)

> *I actually look to the culture outside of academia and science , I look to literature and to eastern philosophies knowing, not necessarily through the negation of mind, but through…Something I'm trying to bring to this, trying to get beyond the constructions we have. I'm trying to bring to…some other kind of eternal, universal…truth…Some of the eastern teachings have been very appealing to me in that connection..So yes, I'm trying to work my way through this. What really is this problem? It's not something that's going to be solved in the mindsets and paradigms or ways of thinking and feeling that generated it. That's kind of where it is at for me at the moment.*
>
> *(DT interview)*

Women in Love DH Lawrence, in having the knowledge of the flower we lose the flower, as soon as we name it its gone, I want to enact the spirit of John Claire the poet, his intimate sense of place that was intrinsic to his being that place, I'm trying to get beyond language and its almost as if you can never look at it …you can name it and label it and its gone……As soon as you start using symbols to mediate the world, those symbols stand between you and the world and you can never really experience the world. You can experience a symbolic version of it..It's difficult to try to propagate these ideas. But they're all around, trying to get past this idea of a limit for climate change, but then you can't put it in words or you'll kill it…

(ibid)

You see mindfulness really taking off in the Anglo Saxon capitalist states..growth growth growth, work until you're dead. People getting depressed and unhappy. And then that can't work any more. Then you have nice mindfulness units being sent in to cure them, so they can get back to work again..So what could be a powerful source of inner transformation is being used to keep the machine working… its classic …You have this thing that's all about resisting impulses, being in the present moment.. But the machine has twisted that around to mean you will be more productive. So then I don't know what to do because I need the mindfulness for myself or I'll get drawn into a spiral of anger because there's so much to be angry about…

(QK interview)

Happiness: in a sense, the existential exploration invoked by climate change and the sublime amounts to no more and no less than a search for happiness. The respondents of the first tranche of interviews agree that climate change calls into question not just the direction, but the deep purpose of late capitalist Western society. This society, they claim, is destructive in so many ways, with climate change being, as it were, a sure sign that we've gone a step too far along this particular collective path. And we need to turn around. Where should we be heading? One answer, common to all is 'towards happiness'. The question, 'should we be heading towards happiness' was never asked by me. But happiness arose in the discussions as a key or strategic factor in redirecting society away from the dangers of climate change and away from the sublime construction of climate change as a distant threatening colossus.

I'm not sorry people are aware of climate change, but I am sorry that it acts as a stand-in for the real debate about what kind of society do we need, to produce happiness.

(NS interview)

What is it that makes people happy?…If how we live neither particularly delivers happiness, and at the same time is destroying the environment, that might lead us to think about how we might redesign our societies, rather than heading off or fixing climate change within the existing paradigm.

(ibid)

…it would be better to think about what would make a nicer world …it would be easy to make Brighton nice, just stop people driving in it, and that actually may be a

better way of thinking about it, than the sublime.. incrementally making the world nicer.

(ibid)

Even if we were able to indefinitely expand the ways of living on these paths, transport, the car culture, shopping mall culture, would we really want to do that? With a consequence of climate and scarcity and commercialisation of children.. massive social ills of all sorts then surely you would think it's not worth it..Why hassle for a life with so many negative consequences, quite apart from the fact that it's unsustainable environmentally? That's the sort of thing I've been plugging around this idea of alternative hedonism..

(LT interview)

Review of the major themes

The theme of hegemony and its children, the themes of societal collapse, moral damage, existential exploration and concern for happiness, along with the sublime and its child categories are the most important for understanding the nature of the dialogues that made up this first tranche of interviews. It is essentially though these themes and their children that an understanding of climate change in relation to the sublime is structured.

The dominant theme, other than the sublime itself, is hegemony. This is significant because normally, we take what is hegemonic as real, we take it for granted and it goes largely unquestioned at a fundamental level. Most inquiries into climate change, and more so, its potential remedies, once these have been formulated as policy frameworks, take place entirely within hegemonic constraints. If that inquiry is critical of aspects of the hegemony, such as its commitment to continued economic growth, it nevertheless remains framed by the dominant hegemony (*Jackson 2009, 2011*). But here, the hegemony is rounded upon as a fundamental source of climate change and what is seen as the likely shortcomings of its proposed (hegemonic) remedies.

It appears from the transcripts and their extracts quoted above, that the interviews' framing of climate change with reference to the sublime has possibly had the effect of releasing the interviewees from whatever hegemonic constraints they might normally have observed, or at the very least, legitimating their anti hegemonic stances. This suggests that a sublime framing of climate change may lend itself more generally, to a critical reappraisal of hegemonic constructions of climate change.

A second general observation with regard to this cluster of interview themes is in order. When climate change is looked at with reference to the sublime there is an important sense in which it appears to journey from an original position of exteriority as a physical phenomenon into human consciousness, where it has a potentially transformative effect. It then re-emerges into exteriority in the form of new and potentially challenging societal responses. The sublime perspective helps us to open up to this dual aspect or exteriorised interiority of climate change. My contention is that this Mobius like symmetry belongs fundamentally to the sublime, which, as has been noted above, appears to human consciousness both externally, as adhering to the object taken to be sublime, and internally, through the sense of moral elevation experienced by the witness to the sublime. The dual effect of the sublime perspective is further explored in the *Discussion* section below.

Minor themes

A number of minor themes, (minor in the sense that they occur less frequently across the group of interviews) support and augment the foregoing major themes. Some of these themes centre on the emotional and moral responses to climate change that were expressed in the interviews; themes such as *fear, anxiety* and *anger*. Others are themes that belong more to the orthodox discourse, such as *technology fix, transition* and *threat to democracy* . These minor themes fill out and further nuance the main structural themes, but are secondary to this analysis. I have therefore located them at appendix 2. But two minor themes stand out for their close association to each other and to the major themes of the sublime and existential exploration: these are the themes of *interdependence* and *deep paradigm*.

Interdependence: one of OPK's most powerfully enunciated themes, I've given it thematic status because of its implicit presence in other interviews, DT for example. The theme links closely to that of *existential exploration* and the minor theme of *repentance* in that in OPK's version, one awakens into an awareness of one's interdependence…..

> *I cannot exist, we cannot exist without, not one, not one animal, not one without the other. And that is the fundamental basis of our reality. I cannot exist, I cannot speak, unless the trees are breathing out oxygen. I cannot eat unless I help myself from the bounty of the land …I am an utterly interdependent creature, as is every sparrow, as is every red admiral, as are our weather systems, as is my relationship with every single woman - being a male..We are completely interdependent. And that piece of the jigsaw has been fundamentally absent from our sacred stories, from our science, from our politics ..from our human understanding of ourselves ..because it involves the acknowledgement of fragility and vulnerability.*
>
> *(OPK interview)*

Imagine if you went to school and the first thing on the first day you were shown… just a picture of a tree.. and you were told,..your life depends on this tree. That would change everything.

(ibid)

I want to enact the spirit of John Claire the poet; his intimate sense of place that was intrinsic to his being that place.

(DT interview)

Deep paradigm: the deep paradigm obtains in the idea of human dominion; that the human is sovereign over every other aspect of life. In a sense it is the obverse of the idea of *interdependence*. With the Enlightenment, the religious justification for dominion gives way to justification through the supremacy of Reason. But the deep paradigm remains. The Kantian sublime stretches dominion, so that the human, through reason, (imagines that he) transcends even the most powerful aspects of the natural. *(see above quotation from LT interview)* Dominion then slips into wanton domination, disregard and destruction. The deep paradigm produces the cultural norm of human exceptionalism; the placing of the human outside of and above the natural world. The cultural shift, or awakening, that so many of the interviewees allude to, as a necessary precondition for properly addressing climate change, is to challenge the degradation of the deep paradigm. It amounts to a repositioning of the human, reason, technology, and all, within the natural. In this way, human capability becomes the point of self conscious concern for the whole, and the journey into that consciousness becomes the basis for satisfaction. This becomes a major theme of the tranche 2 interviews.

'In the beginning when God created the heavens and the Earth, the Earth was a formless void. And darkness covered the face of the deep. And a wind from God swept over the face of the waters. Then God said; 'let there be light, let there be plants and let there be animals, let the waters bring forth all living creatures'. And God said; 'let us make human kind according to our likeness and let them have dominion over the fish of the sea, over the birds of the air, over the cattle, over all the wild animals of the Earth, and over every creeping thing that creeps upon the Earth.' ***…..****That is probably the most powerful piece of writing in western culture because it is the first…It's the base point from which every human being, every monotheistic religion in the West begins from. That's where they start to geographically locate themselves, psychologically, spiritually, physically and emotionally. And that is such a deep root that is set in each one of us.*

(OPK interview)

Women in Love, DH Lawrence; in having knowledge of the flower, we lose the flower. As soon as we name it, it's gone……When Thatcher was voted into power, I became a stranger in this world ….My cousin said I used to watch the TV programme, The World About Us. And I was transfixed. Mediated as it was by a t.v. screen, there's a sense of not wanting to control anything, not wanting to control other people.

(DT interview)

Discussion.

Thematic reconstruction of the interviews

When we turn to the major sources of climate change discursive orthodoxy, such as the IPCC and Royal Society Reviews of climate change science, we find a discourse in which climate change is largely framed as a depoliticised discussion of an external phenomenon belonging to the natural world that has been perturbed by anthropogenic interferences to global systems. Framing these first tranche interviews with respect to the sublime, clearly produces a view of climate change that is removed from the mainstream discourse. Here, by contrast, we have a series of discussions that thematically, are much more focussed on political and philosophical concerns. Arguably, the focus is not really on climate change at all, certainly not climate change as it is treated within the orthodox discourse. The absence of comment on the science, or on the mechanisms of adaptation and mitigation is striking. By and large the interviewees take the science as read. Only one interviewee, DT, was critical of the structuring of climate change around an enumerated target. Instead, the interviewees draw from what they know of the science, to make a different overall sense of what climate change means to them.

So, in these discussions, climate change becomes a way of talking about what these interviewees see as profound shortcomings in the prevailing socio economic paradigm and its associated politics. A sense of alienation pervades the discussions, perhaps most succinctly captured in DT's remark:

> *When Thatcher was voted into power, I became a stranger in this world ..*
>
> *(DT interview)*

The hegemonic interpretation of climate change, as a quantifiable externality that needs to be drawn into, and thereafter accommodated by the market, is unacceptable to these interviewees. They simply do not wish to look at climate change in this way. From the interview material, this appears to be the case because they see themselves as trapped within the hegemony, with little chance of escape, unless the hegemony itself can be punctured. The interviewees interpret climate change as seen through the lens of the sublime as being able to offer that prospect, at least at the level of potential. And it is this capacity of climate change that most interests them. I'm generalising of course, but this is one overall sense that emerges from the thematic analysis.

A second sense is that, on the whole, the interviewees were carrying a considerable deal of unhappiness. This was masked over in various ways, but was also being allowed to show its face a

little, within the interviews. Over and over again, when we talked about climate change, actually what we talked about was the interviewee's concern for a happiness, which they felt was being denied them by the hegemony, just as much, if not more so, than it was being threatened by climate change. But *the hegemony* is also responsible for the production of climate change, in their view, so there is at least some notion of equivalence between absence of happiness and presence of climate change.

A third sense, closely related to the above, is that in fact, for the large part, the majority of the interviewees, even during the interviews, did not seem to be that taken up with climate change per se. They were much more interested in their immediate lives and other political concerns. It was striking, the extent to which, within the individual interviews, the notion of climate change they espoused, was one that fitted their particular world views. I will discuss this point more fully below, but here I will point to the extraordinary forcefulness of what NS called *the sublime construction of climate change*.

In this construction, climate change is viewed as a distant phenomenon, and the distance comes courtesy of the creation of a safe place from which it can be viewed. DT describes the creation of the safe place through the promulgation of targets for constraining future global warming. LT describes how climate change is pushed into *a receding future,* when viewed from the safety of the present. And for each interviewee, the present is largely crowded out with immediate preoccupations that serve to force climate change into the background. Bear in mind the political context of these interviews; the Trump election, Brexit, Syria, coming together at that time to produce a sense of palpable dismay among these educated progressives.

But drawing the themes together with their child categories, one sees a picture of climate change, as it were, pre-existing in its objective externality, being drawn into a subjective interpretation by each interviewee. It is then used by the interviewee, either to confirm a pre-existing world view or to examine, often at a profound level, existential questions, questions of being, and how some inner transformation of being might be effected. Inner transformation, it was felt, might have the potential to produce entirely new world views. In this latter case, if such a transformation were to come about at the collective level, then it might provide the conditions for the creation of new models of society; models that would possibly be better able to address climate change as an objective threat, because the deep societal causes of climate change had been addressed.

One is reminded again of Heidegger's concept of finitude; the threat of an approaching end forces inner renewal and the creative response needed to push back against the gathering storm (*Irwin 2008.133).*

This model of the external and objective being drawn into the internal and subjective, possibly to effect an inner transformation of the subject, suggests the possibility of a climate change inspired eruption from within the hegemony. Ordinarily, (from within the hegemony) we think of climate change threatening the prevailing socio economic orthodoxies from the outside. Indeed an orthodox view of climate change is as an economic externality, or market failure. With this new view of climate change, we see its potential to disturb or disrupt the hegemony coming from both the outside *and* the inside. The disruptive potential of climate change may therefore be much greater than has previously been thought. This is because we have not previously given sufficient consideration to the inner responses of people threatened by climate change.

The limits of thematic analysis: individual narrative reconstructions

Individual narratives.

The thematic reconstruction of the first tranche interviews goes some way towards revealing how anthropogenic constructions of climate change have been achieved by the interviewees. However, the analysis comes at a price, and the question is; is that price worth paying, given that the interviews cannot be taken as representative (in a statistical sense) of the climate change constructions of educated progressives in general. And given the acute relevance of context to these interviews, again, the meaning that can be attributed to the thematic analysis, in terms of generalising from it, is further limited.

What then, is being lost? The answer is the unique individuality of each construction. If the orthodox discourse is being selectively drawn on, to be fitted into a pre-existing world view, or to provoke existential exploration, this draw-down is to the level of the individual. It is the individual's world view or inner transformation that is being effected. Given that the construction of a world view or the process of inner transformation can only take place at the level of the individual, albeit using socially constructed concepts to do this, then it can be argued that the most relevant level of analysis is that of the individual. Or that, at the very least, attention to the individual is a necessary component of an adequate analysis. The thematic analysis on its own cannot capture the sense of the individual's personal narrative.

So it is to these personal narratives that I now turn.

Individual allegiance

At the end of the interviewing process, more than anything else, I felt that to be true to the interviewing experience, I had to keep sight of the individuality of each construction. The question arises: why should I feel such an obligation? Am I not playing to the hegemonic ideology of individualism? The ideology perhaps makes a defence easier, but to me, the reason lies in the trust that interviewees placed in me, or certainly in the interview process, that allowed them to open up to the challenge of positing their views on climate change, in reference to the sublime. This was not something they had previously practiced. In some cases I was stunned by the frankness of the disclosures, and the intensity of consideration my interviewees gave to the topic. In others, I felt humbled by the depth of experience that I knew lay behind the views that were being expressed.

What came across most powerfully through the interview process was the individuality that was clearly present within each construction of climate change. Without a doubt, we use a common language and share many common concepts, but each construction, is personal. It comes out of, and has to make sense of a world view formed from that individual's life experience.

The whole process, and here I am referring to all twenty two interviews, has something important to tell us about social scientific inquiry in general. And that is; we lose sight of the individual at our peril. But how to capture the essence of that individuality?

The process of transcribing the interviews taught me that deep listening is rare. So often, we hear only the surface of what is being said, and have already assigned a meaning of our own to the words of others, or gloss over what is being said because we have something of our own we want to say, that takes priority for us. When we listen deeply, the uniqueness of the individual comes through, and we automatically feel obligated to the revelation, that we are in the presence of another life. Not to take that life for granted. Not to dismiss or side line what that person has to say. Inevitably to reinterpret, but to do so with humility, knowing that the essence of that individual forever escapes us; but to try to honour what we have come to know of it.

In a sense, the written transcripts are a collection of shells and should be regarded as no more. They give some clue as to the life form that once inhabited them, but no real knowledge. A bunch of uniquely arranged symbols that in each case points at something I can neither know fully nor describe. But this is what there is to work with; the transcripts and my living memory of the individual interviews. But what I can do, is offer the reader a unique set of narrative themes that are

my interpretation of what each individual was getting at; what mattered to them most, and what came across to me as the total sense of the interview in question.

In interpretive analysis, the interplay between the understanding of the part and the understanding of the whole makes up the final hermeneutic (*Motahari 2007*). What I am trying to do by offering analysis of the individual interviews in contrast to the group level thematic analysis, is to play out this hermeneutic game. The game of course goes on at multiple levels, for in offering an interpretation of the individual narrative themes of each interview, I am again playing off my understanding of the whole versus that of the the parts. In this case, the parts are made up of the words and sentences of the transcript and the whole is my interpretation of each transcript's narrative theme.

These interpretations of the individual interviews are presented below. They reveal a different picture from that of the thematic analysis. They tell different stories of how climate change is constructed to become meaningful at an individual level. They also give a somewhat different sense to the quotations the reader will have already met in the thematic analysis. This is an effect caused by re-contexting the quotations, from generic theme to individual narrative. For each interview I offer my summation accompanied by a quotation or two, extracted from the transcripts.

In the following it is important to recall that the narratives were produced through dialogue between the interviewee and myself as researcher. So although the narratives that follow are treated individually, each is essentially dialogic in nature.

KC interview. In this country, what we have experienced of climate change so far, is for the most part, symbolic of the real thing. In as far as the enculturation of climate change occurs through fine art, it is necessary that a notion of climate change is drawn from the outside into the artist's inner world of personal anxiety. Here, it will be processed along side countless other factors, clamouring for the artist's attention. Only once it has won through, can it be reproduced as part of the artist's oeuvre. It will emerge drenched in the artist's being, but with sufficient reflectivity that others can see themselves in it.

> *in my own art…all kinds of levels of anxiety will express themselves through the kind of stuff I make. Those levels of anxiety are permeable to one another, sometimes they are transparent to very large events..*
>
> *Your obsession shouldn't be shut off obsessions…. van Gogh's obsessions become the whole of the 19th century's obsessions….. Guernica, a painting done by a man obsessed with wounded women; but that obsession is not exclusive to Spain in the 40s. But it let him do the painting…. Obsessions need to speak to the deep shit in all of us, to be public.*

(KC interview)

NS interview The sublime aesthetic is a powerful lens through which to look at climate change. It sensitises us to the structure of a vision of climate change as an overpowering threat seen from a safe place. In as far as that threat is seen as belonging to the future, it makes us feel that the present moment is where safety lies. This is a dangerous delusion, made worse by the apocalyptic vision of popular culture that drains us of the will to act in the present. So the sublime perspective should lead us to ask how is the sense of safety in the present being orchestrated? And to whose advantage? But the sublime leaves unasked, or occludes, important questions concerning prosaic matters, such as how best can our societies be ordered so that they better deliver happiness.

NS raises the question whether climate change is to be addressed though the existing capitalist paradigm or whether a different values dimension would encourage us to try to fix climate change through a redesign of society, focussing more on what produces social well being and happiness. NS thinks that thinking about well being in the present through a focus on sustainability and equity is a better way to approach climate change, far better than the apocalyptic narrative with its deflection into the future.

> *If science is saying we're heading for disaster, does that mean people are adopting millennial views because they think we've had it and this is eroding the sense that we can, rightly or wrongly, do something about it… So the sublime effect here, if it drives millennial thinking is profoundly negative and debilitating, If there's an internalisation of 'we've all had it'… So if the discourse does generate this effect then, why should I bother doing anything about it….like if I was told I was going to die in 5 years then I'd just go out and try to enjoy those 5 years!*
>
> *(NS interview*)

DT interview. Climate change is offered up for our consumption, dowsed in a dressing of hegemonic neoliberalism that DT cannot swallow. DT is trying to see it in other ways and yes, the sublime speaks to that. DT is trying to go beyond the vision of climate change that's anchored to emissions targets; to get behind the numbers game. There is a reality to this that our symbolic understandings can't reach. But that's what DT is after.

By comprehending what the target is doing, and trying to get behind it, to a deeper comprehension of what climate change is, DT is exploring profound existential issues. DT is a very clear example of someone taking climate change from the outside to the inside to rework it via Eastern philosophy and romantic poetry, to effect a personal transition that might end up producing an external and transformative output that does not belong to the dominant paradigm.

> *Women in Love DH Lawrence, in having the knowledge of the flower we lose the flower, as soon as we name it its gone, I want to enact the spirit of John Claire the poet, his intimate sense of place that was intrinsic to his being that place, I'm trying to get beyond language and it's almost as if you can never look at at …you can name it and label it and its gone…*
>
> *(DT interview*)

QK interview. In the same way as early industrial capitalism drove its labour force to the brink of collapse, today, a highly evolved version of that same system is driving the entire natural world to a similar state of collapse. It is inherent within capitalism that it exploits and degrades its resource base to the point of threatening its own survival.

Within the hegemony, climate change is presented as a threat to us all. In that sense, it serves the purpose of creating a fear ridden citizenry and opens the door to a post political discourse of social control through managed technology and centralised power. This discourse marginalises alternative discourses of deep change and social redirection that might more effectively address climate change.

QK sees climate change though this neo-Marxist lens. Addressing climate change requires fundamental systemic reform, but QK sees no hope of an environmental rescue coming from within a system designed primarily for the accumulation of wealth by the few.

> *Everyone from Tony Blair to Cameron to the Pope and George Bush was saying this is serious; we need to do something. And that's where I became deeply suspicious that if this is something where there seems to be consensus within centralist politics ..But what actually is it? Part of the problem with climate change is that we haven't actually worked out what the concrete problem is..We know that CO2 is very serious but the responses don't measure up to it*
>
> *With climate change, what should be a socio political struggle to redistribute the means of production has been turned into a discourse to justify the continuing growth…the redistribution isn't there and that's where I see nuclear comes in…..*
>
> *(QK interview)*

OPK interview. The cultural root of the environmental crisis, climate change included, can be traced all the way back to Genesis 1, where man is given dominion over nature. The human is singled out and culturally positioned over and above, and separated from the rest of the natural world. Both in science, as observer, and in religion, as being made in the image of God, the separating out of the human is fundamental.

OPK offers the concept of *interdependence*, and its child concept, the notion of *sufficiency*, as the basis for an alternative narrative of the human presence on the planet. By recognising the

interdependencies of all life forms, the human takes its place within the natural, as its most highly evolved point of self consciousness, whose potential may be unlimited. Through an ever deepening understanding of interdependencies, human societies could develop technologies reflecting this new positioning. Such technologies and their institutional surroundings would recognise and honour the dynamic balances between ecosystems and no longer be so destructive. Tinkering with technology at the edges of the prevailing deep paradigm of human exclusiveness will not solve the gathering environmental crisis, of which climate change is a major symptom.

> *the stories that we're told do not in any way change the reality that I cannot exist, we cannot exist without: not one bird, not one animal, not one without the other. And that is the fundamental basis of our reality. I cannot exist, I cannot speak, unless the trees are breathing out oxygen. I cannot eat, unless I help myself from the bounty of the land …I am an utterly interdependent creature as is every sparrow, as is every red admiral, as are our weather systems, as is my relationship with every single woman ..being a male..We are completely interdependent and that piece of the jigsaw has been fundamentally absent from our sacred stories, from our science, from our politics and from our human understanding of ourselves, ..because it involves the acknowledgement of fragility and vulnerability.*
>
> *(OPK interview*)

LT interview. The popular perception of climate change belonging to a receding future, and the onwards drive of an increasingly technocratic capitalist hegemony, conspire to put off the evil day when we have to come to terms with climate change. Two key questions then arise: do things need to get worse before they can get better? And are we running out of time for a managed transition away from the destructive trajectory of the hegemony?

The capitalist hegemony rides on human desire, whose nature is to be ever unsatisfied. So removing that hegemony may depend on presenting desire with an alternative means of achieving endless new satisfactions. LT believes this can be achieved through the non material, once basic needs are met. But this would require a revolution in education, to educate for de-growth, less work and more constructive leisure. The key to triggering change, LT believes, is enticement towards greater conviviality, not the regressive scare tactics of the doom mongers that tends towards tribalism.

> *...climate change, for so many people, is still in the future. And possibly a kind of receding future..people like to think it can be pushed back. And I think that possibly this kind of thing gets tinged with a belief in a possible technical fix …We've always managed to cope with disasters ..There have always been doom laden pronouncements going on about the state of the world …and somehow we always found coping strategies. In a sort of way, there's a certain kind of reluctance to confront the necessity for instantaneous action, because it's not going to hit tomorrow; it's not necessarily going to affect my generation. And maybe we'll find a whole lot of solutions in time anyway.*
>
> *Think in terms of how much more pleasant it might be to live in a more sustainable way; on a living wage that made climate change less of a problem… But that seems to me to be a*

> *very marginal position at the moment…with hardly anyone taking that line very seriously. But I think people may respond. It's one thing people may respond to; being enticed by an alternative way of living, rather than the belt tightening conformist reliance that (it is assumed) would have to come, if you move away from the current consumerist lifestyle…*
>
> *(LT interview)*

Discussion

In seeking to understand these individual narratives in relation to the thematic analysis, and to each other, we are left with the question do they add up? Can we make a picture out of the whole, while treating each part as integral to itself. The answer is yes we can, and it's been done before to startling effect. But what the picture shows is not a plain landscape or a photographic likeness. It is rather, a vision of the fragmented whole, where multiple perspectives clash and become entangled in one another, where the whole and the parts are no longer distinguishable from one another.

Picasso. Guernica 1937

The vision is cubist.

The group thematic analysis strongly centres on themes related to hegemony. It is as though, at the group level, consciousness of climate change is curtailed through hegemonic forces. This, at least, is how it appears from that analysis. At the individual level, however, the narrative appears more able to break free of the collective stricture. Why is this, given that both types of analysis draw from the same core data set - the interview transcriptions? I think the answer is that while hegemonic concern is present within each individual interview, and therefore shows up as dominant at the collective level, the individual, once challenged by the sublime context, is better able to articulate an individuated counter to that hegemony. And it is through the taking up of that challenge that the individual narrative takes form. A further possibility is that, in its Western

European cultural form, the sublime is very much regarded as an individual experience. In its post modern guise, it is the individual, on finding himself immersed in the apparent limitlessness of the hidden power structures of capital *(Jameson 1991. 36)* who experiences the totalising effect of the market as sublime. In the classical 18th and 19th century sublime, it is very much 'the solitary bourgeoise gentlemen' (*LT interview*) who is privileged to the sublime experience. The air of the sublime is breathed more easily at the level of the individual.

Chapter: 6 Analysis of 2nd tranche interviews.

Overview

The second tranche of interviews, constitute the main body of research for this thesis. Sixteen one hour interviews were conducted across January and February 2017. Six of the interviews were held face to face, the remainder were held via Skype or telephone. The interviewees were senior climate scientists, business leaders, policy makers, policy advisors, NGO principals, legislators and lobbyists, all of whom are actively engaged in developing climate change policy and agendas, either at UK or US national or international levels. The interviews were conducted as unstructured conversations of the kind rehearsed during the first tranche of interviews. The interviews were similarly transcribed and subjected to a thematic analysis.

The analysis conducted for this chapter builds on the findings from the previous chapter, where it was established that the sublime can be used to highlight and analyse particular perspectives on climate change. The analysis for this chapter differs, however, from that of the previous chapter, where the sublime was featured as one among a number of key themes through which the interviews, taken together, could best be understood. Here, in this chapter, the focus is on the sublime itself, and the different ways the interviewees explicate views of climate change, when a sublime perspective is instrumental to the formation of those views.

In my chapter on the sublime, *(Ch 4)* I developed the concept of a polyvalent or multi dimensional sublime, as an extension and revision of Kant's classical formulation of the mathematical and dynamical sublime. To these formulations of overwhelming scale and power I added the dimensions of techno/post-modernity *(Jameson)*, unpresentability *(Lyotard)*, complexity *(Morin)* and appreciation *(Tsang)*. I suggest the sublime is best understood as a phenomenon made up of these multiple dimensions, each related to the other, each overwhelming in its own way, each able to function simultaneously with the others within a multidimensional unity.

This sublime is post Kantian in the sense that it is immanent as well as transcendent, and that there is no triumph of reason over the failure to directly apprehend the overwhelming. If there is to be a triumph, then it is be found as a triumph of humility consequent upon a recognition of the human as both belonging to a nature that is understood as sublime, and which is appreciated as such..

This chapter is structured into twelve sections, each focussing on a particular aspect of the sublime as it relates to how climate change is perceived by the interviewees. The chapter begins with a discussion of Kant's mathematical sublime as a framing for contemporary climate change

within the context of planetary history, and ends with a discussion of the present day, acting as a safe platform from which future, potentially devastating climate change can be viewed as dynamically sublime. Along the way, issues of climate change's super-complexity, hyper-objectivity and unpresentability, all facets of the polyvalent sublime previously discussed in this thesis, are used to develop an analytic narrative that bears onto climate change denial and emotional distancing, as well as its risk, apocalyptic and morality framings. The importance of the appreciative sublime to the perception of climate change is highlighted.

The argument developed in each section begins from the interviewees' observations on climate change. The development of the argument and the association of a particular strand of it to a facet of the sublime is my interpretation, overlaid upon the original interview discussion. So for example, the discussion of climate change framed by the long view of the Earth's history, arose out of the SM and BD interviews. The relevance of that framing to Kant's mathematical sublime is an interpretation that I, as analyst, have overlaid upon the original discussions.

In the following, the interview extracts can be thought of as the evidence base from which the analytic narrative is built. The extracts evidence a particular view that an interviewee holds with respect to an aspect of climate change, or indeed of the sublime, as that interviewee understands the term. As stated earlier in my Research Design and Methods Chapter, I take these statements at face value and treat them as evidence of an interviewee's understanding of or opinion on a particular subject. In the analysis, I do not set out to critically appraise any of the interviewees' statements, just as during the interviews, I did not see it as my role to act as inquisitor. So these views as expressed in the interview extracts act as the building blocks which I then use to construct and support my arguments that different conceptualisations of the sublime lend themselves to particular understandings of climate change.

Introduction

When discussing climate change as sublime, we should bear in mind that the sublime itself is fundamentally experiential; it is a response within us to a particular sensory or ideational trigger. What is triggered is the experience of a profound intuition. Such an intuition is not ordinarily accessible to us. As Tsang has it, the intuition we call sublime, occurs within a life limiting context; it belongs to the realm of the extreme. As such, any representation of that extreme, in every day terms, falls short of the mark.

> *We cannot adequately represent a vital limit to our life and our life realised at the limit, and cannot adequately represent its relevance i.e. the relevance of such a limit-situation which concerns our life in toto at its limit. The meaning*

> *and import made of the representation by the construal of the object as sublime, necessarily render the representation to be defective…….In actual life, the intrinsic inadequacy of our representation of the object construed as sublime, is the very source of its significance. Its deficiency in its semantic relations with other categories and its relevance to our encyclopaedic knowledge makes the object evocative of thoughts and feelings arising from our life-endeavour in relation to the limit situation, suggesting to our life a sense of direction, the life which we explore and live.*
>
> (*Tsang 1998. 65*)

Following Kant *(see discussion in Chapter 3)* Tsang takes the view that the experience of the sublime is a facet of consciousness. The sublime does not intrinsically belong to the object itself. So, the sublimity of climate change belongs to our consciousness of it. It is only in relation to us, as humans, that climate change becomes sublime. And a key aspect of that consciousness is that, even as we attribute the sublimity we experience as belonging to the object we behold, (in this case climate change) in the moment of sublimity, the nature of consciousness evoked by the object we take to be sublime is such that we become aware, not only of the object's passing beyond our comprehension, but of our own surpassing of ourselves. Tsang has it thus:

> *A distinguishing mark of a sublime object is that it occasions in the person an intensified awareness of that which is sublime about the object and that which is sublime about himself*
>
> (*ibid. 59*)

This inside outside or Mobius-like topography (*Evans 1996.116: Fink.1997.123)* of the sublime, in that through its being 'beyond our ken', *(DC interview)* it joins us to the object taken to be sublime and simultaneously lifts us up out of what we normally take to be ourselves, suggests that climate change, as sublime, is of profound existential consequence to us. One of the ways that I have tried to express this during the interviews is to suggest that climate change is posing a question to each of us as individuals, and all of us collectively, who belong to present day market driven materialist society. I suggest that it is almost as if the planet were speaking to us through the medium of the changing climate, and demanding an answer to the questions: why do you think you are here? What are you doing with this micro moment of planetary time that is the entire duration of your life? Climate Outreach's George Marshall takes a not dissimilar view; probing what he calls the pervasive narrative of silence that surrounds climate change (*Marshall 2014.3),* he comments:

> *…. to see climate change in an entirely new light: not as a media battle of science versus vested interests or truth versus fiction, but as the ultimate challenge to our ability to make sense of the world around us.*
>
> *(Marshall 2014. 2)*

Such questions connect on a more practical level to discussions around the themes of fundamental change or paradigm shift: can the system, can the civilisation, that created this planetary upheaval, also resolve it? Or must we, who belong to that civilisation, effect a radical transformation in our relationships to the planet, and come to regard it other than primarily as a

realm to be exploited and put to the service of our self esteem and material gain? Such a radical shift implies an equally radical shift in our self consciousness and the sense of how we, given our present cultural fixations, fit in with the rest of life. I turn to these themes below, but seek to make clear at this point, that these questions spring naturally from a perception of climate change as sublime.

Tsang argues that because the experience of the sublime is individual, and may have very different triggers, it will be differently conceptualised (*Tsang.1998. 30 & 82).* Those conceptualisations may have the effect of ennobling or elating, humbling or horrifying the experiencing subject, but these are secondary responses to an initial experience that always carries with it an intuition of going beyond, or stepping outside of oneself or being pulled beyond oneself into a vastness or an implication over which one has no control.

So for example; to the extent we are able to open out to it, we feel dwarfed by the hyper-objectivity *(Morton 2013. 222-237K)* of climate change. And it is the intuition occurring in response to that perception of overwhelming scale and power belonging to the hyper-object, that triggers the sense of the sublime.

The vastness of the hyper object is in relation to human scales. Anthropogenic climate change embraces and envelops the entire globe. It is fed by the residual atmospheric effects of collective human action including the destruction of natural carbon sinks, that has taken place over thousands of years of forest clearing and species destruction, in addition to the relatively recent direct emissions of carbon dioxide resulting from the burning of fossil fuels. The effects of these emissions already built up in the atmosphere, and held there as a stock of heat trapping gasses, to which we are still increasingly adding, will also last for thousands of years into the future. Indeed, it has been proposed that the stock of heat trapping gasses already present within the global atmosphere, due to human effects, is possibly sufficient to move the planetary climate system outside of its long term glacial-interglacial cycles (*Wadhams 2016.30*). In other words, what we are calling anthropogenic climate change may already have irrevocably altered the future of the entire planetary system. Such vastness of origin and implication, relative to a human life span and the influence an individual human can exert over his or her surrounding environment, is, as the philosopher DC has it; “beyond our ken” and in that sense, DC argues, is sublime (*DC interview*).

But our sensing of a sublimity that we attribute to climate change, at the same time, triggers an awakening of the sublime within ourselves, to the extent we are able to open out to it.

SM is an Earth historian and a professor of climate change. He is also a fell runner. I asked him how the two connected. This was his response:

> *At the end of a hard week at work, I like to take myself up onto north Dartmoor for several hours of fell running and emptying myself and*

> *reflecting…And in those kind of spaces, I feel myself opening out …I like to lose myself in the natural world, but also I'll be seeing the lichens on the rocks and be realising these are part of the silicate weathering process that act as a climate regulator, that keeps the climate habitable....I'll find myself sort of balancing on the peat bogs that I know are amazing carbon sequesters…and I feel like I can almost feel the carbon cycle around me…..*
>
> (*SM interview*)

SM's opening up to the sublime, drives his exploration of the deep history of the Earth, and in return, the knowledge he gains through that exploration, feeds his turning back towards the sublime and facilitates it, through what has been termed, *aesthetic intelligence (Brady 2015.182*). When SM runs across the moors, he knows what he's looking at, and he knows how it works in the context of the life's 3.4 billion year history on this planet. And that knowledge feeds the deep sense of appreciation he has for his life, for the life around him, and its immanent sublimity.

The mathematical sublime: climate change in the long view

Looked at from the perspective of deep history, and the extraordinary set of events that made possible the human presence on the planet, we see climate change in a very different light to that cast by the orthodox policy focus on the past two hundred years, and the intention to return atmospheric CO2 levels to their pre-industrial norm. In the long view, we enter a timeframe that is so out of scale with a human life-span, so beyond our intuitive grasp that it exists for us courtesy only of our capacity to conceptualise it. Looking into the night sky, we look upon our own deep history and find it mathematically sublime *(Kant 2008.83).*

SM is acutely conscious of the significance of the long view:

> *It really pays dividends if you appreciate the extraordinary nature of your own existence in the first place and the extraordinary nature of the way this planet works, and the fact that it might be one in a trillion...We can't rule that out at the moment. But something very very special unfolded on the Earth ...I think the best motivation for wanting to preserve the integrity of the biosphere, so that we can continue to persist as a species ourselves, is born out of an appreciation of that; the extraordinariness of our existence. And these rare transitions where one had to follow the other, these revolutions (of the Earth's history) that have allowed us to be born into consciousness. That we have uncovered these by the scientific method, that's kind of sublime. It's the sublime of deep time.…*
>
> (*SM interview*)

The sublime view of climate change, as expressed through the deep history of the planet, situates present day climate change within the context of past planetary cycles, solar cycles and perhaps more importantly, critical steps or revolutionary transitions in the Earth's history *(Lenton & Watson 2011.81-97)*. Each critical step - Lenton and Watson identify eight in total - has resulted in a fundamental shift in the planet's life bearing capacity. In the long view, the planet has, as it were, repeatedly innovated to bring forth new conditions within which life can evolve. These critical steps occurred over billions of years, and have made possible the life conditions that favoured the evolution of human consciousness, as a language capable observer species. (*ibid. 81*) Without these revolutionary transitions occurring in the sequence that they did, and within the time frame that they did, according to the critical step interpretation of the Earth's history, natural selection could not have produced the human.

The arrival of the human through natural selection, (also regarded by Lenton and Watson as a critical evolutionary step in the Earth's history), has likewise brought forth fundamental shifts in the life bearing potential of the planet; in our case through the advance of human produced science and technology. Human technologies are now radically capable of altering, not only the life bearing conditions of the planet, but actually producing new life forms and new intelligences. These capabilities are not necessarily positive in their effects, as the polluting and life destroying negative aspects of advancing technology demonstrate. But when considering climate change within the long view, the positive potentials of the advance of science and technology, absolutely have to be taken into account. In this regard, I contend that it makes sense not to treat human produced science and technology as in any way outside of nature. They belong to the Earth just as much as any photosynthesising tree. And the rate at which technology can, as it were, transform itself, and evolve, represents a step change in the speed and efficiency through which evolution can now proceed.

Evolution is not a clean or positive progression. It is a clumsy hit and miss affair proceeding over millions of years. Trial and error, learning by doing, as it were, is the order of the millennia. Change management specialist BD observes:

> *We know there is this capacity for new life to create itself. You can look back over the past 14 billion years of the cosmos, and you can see this, all the dynamics from the subtle through to the gross physical. And then you've got the biological and the psychological. We know that we can look back, and in, and we know that when a species, or when a particular situation happens and the conditions challenge that species, what we know is that there is a high degree of resilience for life to adapt and create anew. And what is now recognised, is that that generative process, that creative process, actually creates the signatures for what's next, naturally, in the previous life form. What then emerges, although it may not have any direct physical comparison with what went before, and these include the successful organising principles of the species before, so you've got this transcend and include. So nature is smart. It doesn't allow the new to emerge as dominant until its proven…..*
>
> (*BD interview*)

Taking the long view, if we understand human science and technology as an elaboration and enhancement of natural selection, then it too can only progress by trial and error, self correcting towards the proven, if we accept BD's view; albeit that progression is taking place at an infinitely faster speed than its precursor. We also should understand that human science and technology, which we may perceive as mature, in terms of human temporality, has hardly emerged from the womb of nature, if we look at it from a geological time perspective. Climate change, we then see as a bi-product of a very early technological attempt at upscaling the rate of transformation of solar energy into usable energy for the further propagation of new levels of complexity through new life forms and new intelligences. Technology didn't get it right first time, but then that's the way that natural selection works. As BD says, "when the conditions challenge a species, there is a high resilience for life to adapt and create anew." (*BD interview*) And this is what we are seeing as technology and society respond to the challenge of climate change.

The long view and the reverse narrative

SM states above that there is "directionality in the system" (*SM interview)* and this directionality, at the very least must be compatible with the emergence of the human. This suggests that the directionality in the Earth's deep history has been towards ever greater capacity of living forms to utilise nutrients and energy sources to produce ever greater complexity within life. Life progresses from the simple to the complex, by increasing its capability to draw upon available energy and nutrient sources.

Whether we agree with it or not, a sense that there is directionality within the Earth's history, and that there is therefore a trajectory that we would be better to be aligned to, rather than resist, is an important theme that emerged from the interviews.

It is in light of this apparent progression towards increasing complexity and energy utilisation that I questioned a number of interviewees on the logic of a reverse narrative related to climate change. The orthodox policy narrative, based on IPCC science, speaks of an urgent need to reverse the directionality of prevailing trends in global warming, and particularly the production of greenhouse gasses. This narrative is effectively bounded by a policy relevant time horizon beginning with industrialisation in the late 18th century and ending at the close of the present century, notwithstanding that IPPC climate change science is supported by evidence from deep history, and an understanding that the warming effects of greenhouse gasses will last for thousands of years into the future, determined ultimately by the course the global carbon cycle.

But the essential focus of the reverse narrative is on the narrow policy time frame, of a few hundred years, which pertains entirely to human scales of temporal relevance. In the following, I report on some of the interviewees responses to being questioned on the apparent asymmetry

between the short term policy narrative and the apparent long term directionality of the Earth's history.

For SM, it follows from his commitment to the long view, that the idea of trying to reverse a global climatic trend, and return the chemical balance of the global atmosphere to a set of historic conditions that no longer apply looks increasingly questionable.

> *I talk about this tension between a retreat narrative; let's go back to preindustrial levels - if only we could - and a revolutionary narrative; a hold on a minute, we're in a transition, things are multiplying exponentially. There's no sign we're going back. In that sense you're right. It doesn't make sense to look backwards or to think backwards, because there's directionality in the system anyway. So changes are afoot. So rather than try to go backwards against the forces of nature, let's accept that we're going forwards. And let's also realise that we have the power to make decisions and have choice over where we're going..*
>
> (*SM interview)*

SM speaks of a 'tension between' what he calls the retreat narrative and the deep historical directionality. We simply cannot go back to pre-industrial conditions, but neither do we want to invite the 'apocalyptic' down on us, which would be the consequence of following business as usual trajectories. *(SM interview)*. SM takes the view that we have to go forward towards a renewable energy, high material recycling economy that is not fossil fuel dependent. For other interviewees such as BD, Mc D and CV, the issue is more, how do we work with the apparent directionality of the earth's history, particularly utilising the directionality towards increasing complexity, to effect as rapid a sequestration of heat trapping gasses as possible? And for these interviewees, that can only occur through a fundamental and revolutionary fostering of natural regeneration potentials hidden within already depleted ecosystems. There is sufficient sequestration potential, they argue, in regenerating natural ecosystems, to reverse the current warming trend. So we have to adapt our agriculture and industry to allow this to occur, in addition to abandoning fossil fuel dependency, according to this view. CV is in no doubt as to how fundamental a shake up to our entire material culture this would be:

> *It's an all hands on deck fundamental redesign of our civilisation, and its impact on Earth. It starts as small schemes, but this is the only way out of the eye of the needle, the preverbal snowball's chance in hell. And it basically means redesigning our transport systems, getting off fossil fuels. But the important conversation doesn't stop there. Often in the COP dialogue, getting off fossil fuels; the conversation doesn't go beyond transport and heating and industrial powering. But what we bracket out is that our entire material culture, what's lying around us. My computer, derives from fossil materials. But that challenge - in permaculture they say that the problem creates the solution - that we need to grow more bio-mass, sequestering carbon out of the atmosphere in the process, and then we need biomass into the materials that we lock into longer terms in the carbon cycle. For example, building sky scrapers out of wood, which is starting to happen now, locking carbon into the built structure for 200 years.*

> *When we make lasting high quality products out of bio plastics that have also sequestered carbon out of the atmosphere: so its a redesign of our material culture as well as a response to climate change.*
>
> *(CV interview)*

By contrast, the oceanographer OT takes the view that a reverse narrative is precluded simply by the numbers of humans already on the planet. We simply could not feed ourselves out-with a high technology, industrialised agricultural civilisation. (*OT interview*) That plus the fact that, in this view, there is already a sufficient stock of heat trapping gasses in the atmosphere to drive global warming well in excess of the IPCC's suggested 2 degrees safe limit. It is not then a matter of reducing carbon emissions. It is more a matter of eliminating them and on top of that, removing CO2 from the current atmospheric stock, and at an industrial scale. But, in PW's view, we cannot both dedicate sufficient land to biomass sequestration and feed a 10 billion global human population; there is simply not the available space. All of this is compounded by the fact that global CO2 emissions continue to rise. For PW we have driven ourselves into the arms of the climate geo-engineers.

> *Unless you want to favour mass starvation or mass epidemics, we have to somehow keep our industrial society going. And that will mean, if we want to avoid climate catastrophe, finding a techno fix for taking carbon out of the atmosphere. Techno fixes are sadly necessary to keep all the people we have on the planet alive. So that's a dilemma. Techno fixes in themselves are not good, because you're getting even further away from nature. On the other hand, if you're going to try to get back to nature, it's going to be disastrous for the people who are already on the planet. There isn't a solution to that.*
>
> *(OT interview*)

OG, a legislator and trustee of a climate change lobby group, takes a downright pessimistic view of the prospects for revolutionary change.

> *If it were the case that carbon dioxide from fossil fuels were driving climate change and global warming, I have a doubt that trying to stop it is economically or politically possible. Because - a thought experiment - imagine if the world really did cut back on its use of fossil fuels; the impact would be a fall in the price of fossil fuels. But as the price fell, the countries which at the moment are limited in what they can do because of the price, they would simply burn more.*
>
> *(OG interview)*

NT, Director of a major climate science institute, thinks humanity incapable of any radical alteration to its current socio economic trajectory, short of a major climatic event that acts as a game changer:

> *I don't see some great epiphany of humanity; that we've got this one little blue planet and we've got to take care of it. I just don't see it. We're not mature enough, I don't think. And so, if you're going to see progress on this, it'll probably be through market forces. Here in the US, big coal is dying, partly because of fracking, and natural gas is cheaper and much cleaner. It's not great, but its much better. You're seeing the market forces at work. And*

> *that may be the only way to get a handle on this. I don't have enough faith in our species, unfortunately, to think there's going to be some epiphany; to suddenly see the light, so to speak.*
>
> *(NT interview)*

The long view, with its apparent evolutionary drive towards greater complexity and energy through put, does not translate itself into a consistent set of responses to the issue of reversing global warming trends. However, we should be cautious in our acceptance of the idea of directionality in the first place. The directionality that can be seen is purely a product of hindsight. Looking forward, it disappears. What we are confronted with instead is contingency, all the more so as climate change signals the approach of a new point of critical change in the Earth system. Sufficiently perturbed, the global climate system will enter a period of chaos and liminality, before settling into a new and unknowable equilibrium, which may or may not be supportive of future human life.

the sublime of super-complexity: the prospect of system change.

Towards the upper range of the IPCC's predictions for future global warming (*IPCC 2014*), we enter largely unknowable climatic territory. IPCC scientists have long determined that over 2 degrees of warming above pre-industrial global average temperatures, the Earth system would very likely enter a new phase of climatic uncertainty. At the upper range, the IPCC's forecast is for between 2.6 and 4.8 degrees of warming by the end of this century *(SMP2.2 IPCC 2014*). This climatic territory is unknowable to the extent that contingency emerges where the Earth system arrives at a point of fundamental systems change. Perturbed beyond its resilience capacities, the Earth system would enter a transitional phase where chaos and contingency would rule before the system settles into a new and unknowable next equilibrium. In theory, the more complex the system and the greater the forcing that is driving the change, the less influence the system's evolutionary history will have over its future state (*Meadows 2008. 86-110*). Does that mean the Earth's climate could run away with itself, driven, for example, by the current Arctic amplification? Not according to the view of NT:

> *The Arctic is basically responding to what is happening elsewhere. Now there are albedo feedbacks, that accentuate the warming, and caught up in those sort of feedbacks, the outside is warming up the Arctic, and the understanding is that these albedo feedbacks can in turn influence the outside. So for example, would Arctic warming influence jet stream patterns that would influence weather patterns in London? There's something called a permafrost carbon feedback; carbon locked up in permafrost so that if you really warm it up , the critters in the soil become active and release carbon dioxide, and release methane. There are those sorts of things, but it can't just run away with itself. Ultimately, on the planet, the negative*

> *feedbacks have to dominate or else it runs away with itself. A runaway feedback is what happened to Venus, but there are some clear brakes on the system. The biggest is something you call the Planck effect; as you heat up the planet it's going to radiate more strongly into space. And that depends on the fourth power of the temperature. It's not that you heat it up a little, and it radiates more into space to keep it cooler. It's to the fourth power of the temperature. In other words, the more you raise they temperature, the harder it is to raise it more. So there are brakes on that, but that's not to say that the Arctic is not a significant player in this. It can have these impacts that are hemispheric if not global. But no: if you were to reduce the atmospheric load of carbon dioxide significantly, in the atmosphere, the ice would come back, the Arctic would cool.*
>
> *(NT interview)*

Ultimately the Earth system will rebalance itself, according to NT. Further, if climate forcing were brought back to pre-industrial natural background levels quickly enough, by eliminating anthropogenic greenhouse gas emissions and significantly reducing the current stock of greenhouses gasses in the atmosphere, certain physical aspects of the climate system such Arctic sea ice melt could well reverse their current directionality. But a key question is: 'is this possible in the timeframes available before the system as a whole loses touch altogether with its current equilibrium?' Interviewees vary in their responses to such a possibility. Some, OT for example, take the view that the atmospheric system is already so overloaded with greenhouse gasses that its new unknown directionality is already set (*OT interview).* Other's such as OG and NT take the view that human societies are incapable of the kind of transformation in economies and societies that such reductions would demand. No one is wholly optimistic that the reversal is achievable in time. CV speaks of a *"snow ball's chance in hell of getting ourselves out of this mess"* (*CV interview*). Only AR takes the view that there is no evidence of a significant surge in warming, sufficient to trigger system change. However for most interviewees, the key question then becomes, 'how well would human civilisations cope with a period of climatic liminality in the Earth system that might be quite short in geological time, but for humans, could last for hundreds of generations?' The question is profound given that human societal systems have no ultimately stabilising negative feedback such as is provided to the climate system through the Planck effect. Better then to reduce the climate forcing to an absolute minimum, as fast as humanly possible to rule out as best we can, the potential for catastrophic (to us) systems change.

From this perspective, we see two interacting complex dynamic systems. The natural global climate system, which is subject to its own cyclical instabilities, and the complex of human social and technological systems whose effects on the global climate system have been and continue to be to drive the climate system from its very recent historic period of relative stability (which allowed the evolution of human civilisation in the first place. Neither of these systems is in any sense controllable outside of extremely limited parameters (*CV interview)* and both appear to be on the verge of fundamental state change. These systems are interlocked, and in addition to their internal feedbacks such as the albedo feedbacks of the Arctic on the climate system, and the financial instabilities of the global economy, they also feed back upon each other. KE brings this

point to the fore through her observations on geo-political sensitivity to the effects of climate change on human societies.

> *And we talk about the refugee problem now, as if it was big in size. As far as I can see it, climate change will just exacerbate it more. The more you make the planet uninhabitable, the more you move people around,..it's inevitable. And there will be people who aren't effected much by climate change, who will either have the wealth or just where they are, they will be able to cope with climate change much better.. And strangely enough, those will be the countries where you'll get refugees trying to come in. What happens when you get mass mobilisation of people? Well I think you see the rise of the right, …... I think it's a massive political issue. It's like a humming in the background. It's there, and it's kind of underpinning all of us.*
>
> *(KE interview)*

Such degrees of dynamism and complexity as exist within the twinned human-climate global system cannot be fully comprehended or mapped, let alone do they lend themselves to prediction and control. In this sense they are sublime to human understanding. They demand different kinds of response than might be relevant to problems that can be isolated and clearly defined; they even demand different kinds of analysis and a different approach altogether from science, to the extent that science can credibly provide a factual basis for a human response to such complex system breakdown (*Saltelli & Giampietro 2016*). Problems associated with super complexity have been variously analysed as wicked (*Rittel & Webber 1973*), or super-wicked (*Levin et al 2012*) or post-normal (*Funtowicz & Ravetz 2003*). In each case, the usefulness of reductive science as a basis for producing predictive linear cause and effect models of these problems to provide credible evidence bases for policy responses to them, has been severely criticised (*Saltelli & Giampietro 2016*). CV takes up the point with reference to the discursive orthodoxy of mainstream climate policy discourse:

> *trying to understand, to wrestle prediction and control from nature, with humanity being outside of nature, is a mistaken endeavour. It's never really possible to do that. And the cutting edge of modern science, and particularly when dealing with climate models, complexity theory tells us that complex dynamic systems which we're all an example of, and the climate system is extremely complex and dynamic, are fundamentally unpredictable and uncontrollable. And so the whole scientific endeavour of wresting certainty from the world is actually, to some extent, mistaken.*
>
> *(CV interview)*

Other critics of climate discourse orthodoxy also see the complexity of issues related to the coupled human-climate global system as justification for a degree of scepticism:

> *I was simply struck by the certainty with which people were asserting that climate change was driven by CO2 emissions as well as the precise quantitative predictions, within a range, but still quite tight. And I was aware of the system being essentially chaotic; that order as it manifests itself is very*

> *unpredictable on a short term basis and yet these long term trends were being predicted with great certainty.*
>
> *(OG interview*)

Lobbyist AR is troubled by the rigour with which the consensus view is defended:

> *Normal science needs attempts to verify, and attempts to falsify. And the climate science suffers, in my view, from a lack of attempts of falsification. There is a lot of work on verification, and very little on falsification and anyone even trying, which in normal science should be normal, to shake the tree and find the signs of flaws, but any attempt to find flaws, is regarded as heresy. And this is a problem. That's where climate science is a bit different from other forms of science where its OK for other researchers to look and and recheck; trying to find flaws and to compete on the veracity of the science.*
>
> *(AR interview)*

The sublime perspective on climate change, because it throws the focus onto the enormity and complexity of climate change, mitigates against the closing down of climate change discourse, for example through unquestioned allegiance to the orthodox narrative of reductive policy prescriptions.

Responding to the super-complexity of anthropogenic climate change.

I asked the interviewees to respond to their recognition of super-complexity within the coupled human-climate system. One common theme to emerge is that there are no remedial "silver bullets", no single interpretations even, for what lies before us. Energy and climate change scientist LB was quick to point out:

> *What we need to be careful of, is coming up with A VISION. What we need is a myriad of visions. Someone asked me recently what was my vision, and I said: my vision is that no one has the vision that is dominant.*
>
> *(LB interview*)

CV echoes this sentiment in his quip from Blake:

> *"God protect us from Newton's sleep and single vision".*
>
> (*CV interview*).

MC takes a similar line:

> *One of the things that we all do in the climate change movement is try to find the silver bullet and if anybody says they know what it is, phone me..*
>
> *(MC interview)*

Other interviewees are more appalled by their sense of the challenges that super-complexity present to human societies. NT takes the view that we are not up to the job:

> *It's not clear to me that our species merits long term survival, but we'll see…. I just don't think our species is mature enough. (to voluntarily sacrifice personal advantage for the greater good of humanity) We are too self destructive, too self centred, too short sighted, at this point. I see no evidence or signs that we, as some kind of a global community, could come together and say, Ok we're going to do this.*
>
> (*NT interview*)

ER is also pessimistic:

> *A particular problem for climate change, because I think the way people understand the world is generally, they triangulate between what they're told by what you hope are trusted newsworthy organisations, with what are personal experiences or friends' experiences...Classic phone-in territory...but you could never hold a phone in like that for climate change…..it isn't personally relevant and it certainly is not enough to give a political mandate for change. And so it can be partitioned into a 'we can deal with that later' or 'it's not terribly pressing' corner..It doesn't compare with the threat from terrorism of if we can get the number of kids in our class under 30..and those kinds of immanent pressing problems. And of course, many people can't get food on the table this evening. Until: the worry around climate change is that by the time those kind of direct experiences start to come to the fore, it's probably too late, because there is a lot of latency and lead times, temperature change, and so on, which means that for a considerable period of time it's going to be continued hand to hand combat at a political level to try to get action…*
>
> (*ER interview*)

BD stresses the power of reactionary forces when presented with fundamental change:

> *What happens as an organism changes? There's no guarantee the new is going to emerge; the reaction of the old can be so powerful it can kill off any new DNA or any new psycho-social DNA. And that can be shown by the numbers of civilisations that have disappeared from the planet that we know about. And also through truncations in the evolutionary ladder, where the change came so quickly that the pace of adaptation couldn't be met.*
>
> (*BD interview*)

Given these warnings of human frailty and the power of the past, what is in the armoury of human consciousness, that might suggest there is a way through for us, so that we could influence the planetary response to human induced global warming, in a way that is favourable to our long term survival.

LB suggests the answer lies in the direction of flexibility:

> *What we need to do is ensure that the mechanisms that we put in place are flexible enough to be adjustable on the hoof. And that's very different from the optimised route that we in the West have adopted, particularly in the last 30, 40 or 50 years. And I think this movement away from optimisation towards learning by doing and iteration…… it's quite different. A different attitude towards policy making and politics, where you no longer have the arrogance to say: 'this is what you should do'. But rather, given the information we have, which is the best or second best route we can go down,*

> *because it allows us more flexibility if things don't turn out to be as we expect.*
>
> (*LB interview*)

To the UK policy maker KS, whatever we do, we must remain open to what we don't know:

> *Repeatedly, we understand that we understand less and less. The Arctic is operating outside of even the most pessimistic IPCC models, so there is other stuff going on…*
>
> (*KS interview*)

To Institute Director McC, we need to further develop our capacities to view problems on multiple levels and open up to deep structural challenges present within our prevailing economic political and cultural orthodoxies:

> *…..addressing challenges from a whole system perspective..And really realising new potential, not just solving the existing problem, but realising new potential in ways that there are many emerging benefits…. And we're trying to understand, how does that unfold across many areas of inquiry? This is particularly relevant as regards to climate change. Not only in communications, but how we think about climate change, as a dominant frame for evoking the perilous relationship that the design of civilisation is forcing between humans and non humans; our ways of being human in a non human world. Climate change is often this paradoxical frame, simply because it gets reduced so readily to CO2; so many PPM, which is extraordinarily important to understand. (The IPCC have done an amazing job in raising awareness of this particular metric) And at the same time, that singular metric really provides a false sense of what the deeper systemic challenges are. That metric really refers to a consequence that speaks of much deeper structural challenges that we face within the design of industrial civilisation and the global economic system.*
>
> (*McD interview*)

To CV its our capacity to revision our relationships to the non human:

> *So the overall framing is; can we redesign the human presence on Earth from having a destructive impact to having a regenerative impact? There's a mistaken assumption in our way of seeing ourselves, which is that human activity and nature are in inevitable conflict; that humans will always be a negative impact. It only happens because we create that intuition. So in this initiative we say: we have the skill to become a responsible key stone species in every sub system we live in. And we can bio-sequester the carbon out of the atmosphere and back into the forests and into the bio materials that will form the basis of our future material culture, now that we have to move away from fossil fuel. But in doing so, we are redesigning our entire economy and structure, from local to regional to global; not the other way around. And giving the water and energy sovereignty back to the people, but doing it with lots of small projects carefully adapted to the particular place and it's bio-cultural sensitivity..... , So its really turning the entire conversation about climate change on its head. And most importantly, by saying we can reverse global warming.*
>
> (*CV interview*)

For BD, it is in recognising what it takes to break out of prevailing orthodoxies:

> *When you're right on the leading edge of change, you really have no idea of what is going to emerge next. And if we try to explain it, that can actually delay the change you're looking for. When we use language and constructs drawn from the past, that can hold things up. And that's one of your barriers that you were talking about.We don't have ways to explain this transition; the lexicon of metaphors, similes and language that we have is all from the previous paradigm…..So this transformation that we are in, and this applies to all transformations, is that we have to question everything, every assumption of what we believe to be basically true, across all aspects of our society.*
>
> (*BD interview*)

For entrepreneur KE its about taking your chances where you find them, and the willingness to fight your way through chaos:

> *What's fascinating in what we've seen over the last three years; we've seen more solar added than anybody ever thought would be added. There's about 30 gigawatts of solar installed and the market didn't realise it was happening. It came out of the blue, really hit them. So there' s a bunch of stuff come through and actually, we were never going to go through an orderly change. So don't wait for one, because nobody is ever going to change their business model if its going to be a disadvantage to them.*
>
> (*KE interview)*

These views suggest that it is not wholly beyond human capacity to achieve radical transformation in our engagement with the world we depend on. But if we embark on rapid and radical system change to our own societies, we should be aware that the ultimate direction such transitions will take cannot be available to us at the outset. Like the climate system, once sufficiently perturbed by our own doing, human societies will likewise tend to fall into a period of liminal contingency and chaos before they settle into their own new equilibria.

the dynamical sublime and the overwhelming power of climate change.

Through its mathematical sublimity, climate change can never be immediate. A sudden heat wave, a flood, a tide of refugees, each perhaps a symptom attributable to climate change, yes, but global climate change reserves its overwhelmingly destructive potential to itself, which can never be immediate to us, who are condemned to locality. This impossibility of confronting climate change in its immediacy was likened by NS in the tranche 1 interviews, to our own death. For as long as we are healthy, the death that will one day overwhelm us has next to no meaning for us. *(NS interview)* We are taken up instead by the immediacy of our own lives. This means that, to the extent that climate change hangs over us as an overwhelming prospect, like our own death, for as long as we feel we can get away with it, we will ignore it. In its potential to overwhelm us, climate

change is dynamically sublime, in a Kantian sense. And we will do what we can to hold that sublimity at bay.

Three principle ways of dealing with the dynamic sublimity of climate change were discussed in the interviews. These were: semantic distancing, emotional distancing and denial.

Semantic distancing from the dynamical sublime: Unilever and the 3 worlds.

Our human consciousness is largely taken up with matters of immediate self interest, to the point that we have almost no time at all to consider the wider or deeper aspects of our existence. In her interview, KE distinguishes between the three worlds, which human consciousness effectively occupies. Referring to attitudinal studies conducted on behalf of Unilever PLC she observes:

> *….it was this piece about my world, our world, and the world, and the fact that how many conversations can you have with an individual and how much of their time will you be allowed to take, when you talk to them? So in my world I'm thinking about getting out of bed in the morning, feeding various animals , speaking to my daughter, making sure she's ready for school; that's my world and that's my world that's hitting me. And I'm happy to operate like this, particularly, probably, at my age range. I think when you're a bit younger, and you don't have kids, you don't have as much, and I think it will change again, but that's where my world is…So then I think the our world is a piece about society; that's, do I care about my community? Do I care about my fellow human beings in my country? Do I care about Brexit and all those kinds of things? And then the world is big; like this planet we live on. And I think the conversations you have with people at the level of the world are really limited. You might be able to have ..if you took any conversational time with a human being, with what conversations you'd be allowed to have, depending on the time of life, and depending on what they've got going on, I think you might be able to get maybe half a per cent on the world, for the majority of people, you'd probably be able to get 10% our world and then the rest about my world. It'll change for different people at different times of their lives……What's interesting, when people get stuck in my world too much, is that they can almost refuse to get out of my world. They become victims of my world . What you want them to do is say: I'm prepared to put some into our world and the world and I'm not going to be a victim of my world . And when I see people taking time out and doing meditation, that's the thing I see; they're thinking deeply about stuff and working on themselves, and if they allow this other peace to happen……..*
>
> (*KE interview*)

My world, in Unilever's terminology, is the world of immediacy, anxiety and desire. It is also a world the capitalist economy knows only too well how to exploit. Capitalism, as I expressed it in my tranche one OPK interview, "rides on desire"; this is why it is so deeply entrenched in our society and will not be easily dislodged. It is, as NT puts it; the only system that has ever worked:

> *Why is capitalism the only system that's ever worked? There have been other systems, more social, but capitalism is the only one that's ever worked. And the reason why it's the only system that's ever worked can be summed up in my mind, in one word: greed. It's a greed based system. It recognises greed as part of the human psyche. I'm going to make my big pile. I'll step on*

> *whoever I need to. I'll enrich myself . That's why capitalism needs to have bounds on it. It's the same answer. Because otherwise it would be unbridled. And the reason that I bring that up is that altruism is not part of the human psyche in the same way. You only see altruism when you've already made your pile, generally.*
>
> (*NT interview*)

Of course, as NT implies, we put moral and political boundaries around our unbridled appetites, but, as we all know, these don't really work; what we try to inhibit in one context seems to escape us in another. As a result, collectively, we have ravaged the planet, running from our fear, in pursuit of our desires. And it seems, we have little choice but to continue down this path.

In terms of the 3 worlds model, for the large part, as far as I am concerned, climate change belongs wholly within *the world,* for which I have very little time. I choose to put it there. The consequence is that for as long as this situation obtains, politicising climate change, will remain an uphill struggle.

> *It's going to be continued hand to hand combat at a political level to try to get action. It's going to take corralling political interest towards making stuff happen beyond people's emotional attachment to clean energy, rather than tackling climate change as a theoretical threat. That doesn't fill me with joy. It's a recipe for a long hard struggle. But, ..I think that at one point we thought that if there was a big Arctic melt then that might trigger an 'Oh Christ moment, at least in the Christian world, probably something else in the non Christian world, a shock to the system, where people said: Oh my God it's really happening'. But all I can say is we don't see it so far, and things have got pretty bad in the Arctic, in terms of ice melt. But it doesn't seem to have made a serious impact on the collective human psyche. So in terms of delivering action, I don't see any easy get out for any of this stuff.*
>
> (*ER interview*)

NT thinks likewise. I asked him, how, given his views on the human as an immature species, lost within the fascinations of *my world's* greed based capitalism, how things would pan out :

> *We'll go 'gung ho' in burning fossil fuels till they run out. Then you have to bring in something else. It's a matter of what's affordable. It's what you've already seen, right? Big coal is dying in the US. People blame President Obama's clean air policy; that has a little to do with it, but not much. It's mostly fracking. Natural gas is much more abundant and cheaper. Natural gas is in fact a much better burning technology. It's a band aid, but it's much better. It's purely market driven and you know, I think that's how you're going to continue to see it, until it becomes more expensive, when it becomes more scarce, and then you'll see the change. But at some point, it will become so obvious that the climate is changing in bad ways, that maybe there will be some awakening. Maybe we will mature. Usually the only way that humanity matures is through some great disaster. It's the only thing that wakes us up.*
>
> (*NT interview*)

Emotional distancing from the dynamical sublime

But there is no guarantee that even the starkest evidence of the climate changing adversely, from a human perspective, will trigger a decisive shift in how we regard the change. Even losing your home to violent storms that scientists might attribute to climate change, is not necessarily followed by an acceptance of that claim (*Marshall. 2014. 5-9*). After the storm has passed, people come together to rebuild their lives and shore up their communities, but Marshall finds little evidence that in that rebuilding, people are making fundamental changes to how they have always lived, and what they have believed *(ibid)* As KE observed:

> *You don't want to know your planet's not going to be liveable on, you really don't.*
>
> (*KE interview*)

Even when the storm crashes in on *my world,* and *our world* we may still prefer to keep climate change within *the world,* where it's far easier to close the door on it.
Psychologists call this behaviour emotional distancing. We create emotional distance between ourselves and that which we have no wish to contemplate, because the consequences of doing so would be too destructive, as we see it, of our established lives (*Stoknes 2015. 338-345K & 1805-1839K*). In the face of emotional distancing, the provision of more information, does not bring the issue closer (*Marshall 2014.123)*.

LB suggests that in fact, none of us are able to take climate change seriously:

> *I'll tell you, none of us think its serious; whether its NGOs or scientists, none of us take climate change as a serious issue. It's still at the moment - and maybe this is a psychological problem for us as a species - it's something that's too distant from us. It's too distant temporally and too distant geographically to really empathise with it. We might be able to understand it scientifically but we cannot empathise with what it actually is.*
>
> (*LB interview*)

LB then suggests, and he readily admits he may be 'grasping at straws', that possibly, we could bring climate change closer by associating it with what he perceives as a widespread social malaise affecting the West, evidenced by such political shocks as Brexit, and the Trump election to the US Presidency. In other words, could we bring climate change closer by associating it with other profoundly negative aspects of our social and political lives that are already close to us. In Unilever terms, could we successfully associate or entangle climate change with other political factors that already occupy *my world* and *our world ?* As sociologists Laclau and Mouffe have theorised it, could we create chains of equivalence across multiple matters of concern and include climate change within them *(Laclau & Mouffe 2014. 253K).*

> *Sometimes I'm not sure as to how blind we are. I think we've got enough information at our finger tips to know that what we are doing isn't correct. And this cognitive dissonance, it's convenient. But, and you could argue that this is just my interpretation of it, but we are amenable to being shaken, because*

> *we do at least hold in part of us, a knowledge of what to do. So I think there are a number of pivot points that are coalescing - and this could be me grasping at straws, but, - I'm not hopeful - but nevertheless, if we don't try and bring them together to make something sufficient to …There 's enough similarity about them, that allows us to mobilise these different constituencies around a similar set of goals that are all questioning the orthodoxy of politics and economics… And that could overcome, not only an absence of concern for people's jobs, and prosperity, and people's family income. You see it most clearly in the dust bowels and around northern cities, and with Trident nuclear submarines, a complete disregard… There are alternative ways to reconcile climate change with this broader social malaise, that we're living through.*
>
> (*LB interview*)

A realistic strategy in the face of emotional distancing from climate change, may be to focus policy on immediately pressing problems like smog and air pollution, (*ER interview)* or on energy related geo-political concerns (*KE interview)*, whose amelioration may also positively impact on the climate.

However, such work-around strategies on their own, are likely to be inadequate. When we consider the enormity of the global threat from climate change, the urgency of the need to respond to it, the time lags built into the global climate system (*LB, ER, NT, OT interviews*) and the extent and degree of societal change, necessary to respond adequately to it, according to interviewees such as OT, KE, LB, McD, BD and CV, then a work-around approach on its own, may never cut it. There seems, in short, no available, certainly no sure-fire, political strategy, able to shift climate change out of *the world,* where we can close the door on it, and bring it closer to what counts most for us and therefore bring it within reach of present day political sensibilities.

Nonetheless, the incremental approach that focusses on what is of immediate gain to us, may be of vital importance. It offers the prospect of a toe hold on to an issue whose precipitousness is all too apparent. If incremental gains can be designed so that they can create forward "path dependencies" among those willing to 'constrain their future selves" *(Levin et al 2012.124/5)*; in other words, if they set directions towards expanding and deepening commitment to climate change mitigating behaviours through time, these initiatives, although small in the beginning, may come to serve as important focal points for broader behavioural change later on, because proof points in terms of feasibility and benefits have already been established.

Denial as distancing from the dynamical sublime

The very fact that climate change is publicly spoken of in terms of belief or denial, should alert us to its sublimity. God is similarly spoken of, as is truth. This suggests, at the very least that somewhere, at some level, we perceive climate change in terms of an absolute; that we perceive it as bearing some sense of finality or finitude *(Irwin 2008. 4,133,143).*

In 1995, following the publication of the IPCC's second Summary for Policy Makers, Exxon Mobil produced a reasoned, and balanced critique of the report, as a primer on global warming for its own internal communications purposes (*Exxon Mobil 1995)*. The primer argued that the IPCC's claim, in its Summary, that a human induced causation of observed global warming had been detected and was attributable with 95% confidence, was an over statement of its own evidence and was contradicted within its own technical documents *(see also Taylor 2009).* The document shows that within its own Environmental Health and Safety Division, Exxon Mobil had a reasoned and balanced appreciation of the issues inherent within climate science at that time. But the primer then became the basis for a corporate defence strategy and subsequent PR activities. These show Exxon Mobil, along with other oil giants, engaged in aggressive initiatives designed to erode public confidence , and hence the political tractability, of the IPCC's version of human induced climate change *(UCS 2007).* Exxon was fighting to defend the value of its known and extractable fossil fuel reserves, which underwrote its capital value (*ibid*). If Exxon Mobil could not defend its future reserves, it could not defend its current capitalisation, which would then call into question the viability of its current and planned activities. So the strategists reasoned. The orthodox IPCC view on climate change posed what was seen by senior executives at the time as an existential threat to the oil giant. And, to be clear, the perceived existential threat did not stop at Exxon Mobil's door. It extended out to the global economy through the interlinked networks of global capital and stock markets, where giant fossil fuel and other extractive industries still dominate the top 100 companies (*WEF 2016)*.

I asked the lobbyist AR what in his view, was the consequence of trying to conduct reasoned debate on climate change in a context where the stakes, in terms of possible consequence, are taken to be so high. AR takes the view that the all or nothing perception of climate change affects both sides of the debate:

> *It makes it radicalise people. Apocalyptic views have always radicalised people. In order to save the planet everything else is out, essentially. (For a company, defend your stock value to the last.) So you have a very radical movement that is determined to introduce policies that might be detrimental to the social well being of families and countries and you have people who do no longer wish to discuss with other people. You have this kind of dogmatism in our world that undermines democracy, undermines fairness, undermines openness, all the features and values that came with democracy and the Enlightenment were essentially abandoned. You have institutions that no longer allow dissent. Scientific institutions that no longer publish papers that they don't like. So it is a very dangerous situation because it undermines the whole western civilisation model that we've developed over the past 300 years. That is a threat of it going out of the window. There are people thinking, you are not allowed to question the threat to the planet who have to be either sacked or silenced.*
>
> (*AR interview*)

NT is also disparaging of extreme views on climate change:

> *The way that I view this is that the shrill arguments on the left are as unhelpful as the shrill arguments on the right. And the shrill arguments on the left overdo it..humanity's going to die, the sky is falling in; the shrill argument from the right is: it's a hoax, it's being made up by scientists trying to get their fat government contracts. And there's something in the middle: we have a problem here, its going to grow, let's deal with it in a constructive way.*
>
> (*NT interview*)

The point, with respect to this thesis is neither to condone nor condemn manufactured denial *(Klein 2014. 46*) of climate change, or any other kind of extreme argument or any kind of censoring of dissent on orthodoxies within climate science or policy communities, however justified. Rather, it is to show how the perceived extreme consequences of climate change, the different senses of finality that the dynamical sublime produces, disallow reasoned debate. There is simply too much that is perceived to be at stake.

> *Of course there's great reluctance to accept any of this by big business, because it hurts the bottom line. So you're going to see constant down playing of this or reference against a human role: that's going to be there and we're dealing with human systems, right?*
>
> (*NT interview*)

the unpresentable sublime: climate change and its representations

Timothy Morton coined the term hyper-object to refer to things that are massively distributed in time and space relative to the human. A hyper-object, says Morton, could be the solar system, or the biosphere, and hyper objects involve profoundly different temporalities than the human scales we are used to (*Morton 2013. 104-109K*). By these criteria we can think of climate change as being hyper objective, indeed Morton treats global warming (his preferred terminology) *(ibid 142-146, 222-231K),* in this way. And through its its physical and temporal extensiveness we can also regard climate change as defying comprehension; that is, if we try to grasp it in its wholeness. We cannot take it in, other than by conceptually disaggregating it. And even then, its scale seems so great as for it to be "a greatness comparable only to itself" (*Kant 2008. 80).* To consider climate change in its fullness we have to include the geology of the planet, its ocean circulation, the global atmosphere, the cryosphere, the biosphere, human societies and their interactions with these planetary systems, and of course the sun as the external source of the Earth's energy, and the movements of the Earth around it. We also have to ponder climate change's temporal extensions in terms of its origins and lasting effects, which, as we have already

discussed, dwarf human time scales. In these senses, climate change is mathematically sublime. Kant says:

> *…for the mathematical estimation of magnitude, there is of course, no greatest possible magnitude, (for the power of numbers extends to infinity) but for the aesthetic estimation there certainly is, and of it I say that where it is considered an absolute measure beyond which no greater is possible subjectively (ie for the judging subject,) it then conveys the idea of the sublime and calls forth that emotion which no mathematical estimation by numbers can evoke…*
>
> (*Kant. 2008.82)*

Through its hyper-objectivity, climate change presents an exemplary instance of the mathematical sublime. But in Morton's schema, such is the vastness of the hyper-object, that it is not directly available to the human sensible imagination. In that sense, Morton suggests that the hyper-object is withdrawn from human consciousness and appraisal (*Morton 2013. 288K*). It is unpresentable. All we can do to apprehend it, is to present instances of its emanations or to otherwise theorise or symbolise it. But no representation of the unpresentable and inaccessible reality of the hyper-object can ever capture the whole, no matter the number and diversity of these representations. They will always fall short. The unpresentable reality remains sublime to its representations (*Lyotard 1984. 78).* And it is in exactly this sense that climate change too, is sublime to its representations, no matter the vastness of their scale, such as in the retreat of Arctic sea ice, or the severity of their consequences, such as in the case of Sudanese desertification, or the exactitude of its scientific quantifications as in the parts per million measurements of atmospheric heat trapping gasses.

ER forcibly makes the point that climate change is not a "clear and present danger" (*ER interview)*. He argues that the nature of climate change, its abstract withdrawn character and its invisibility, render it distinct from other social issues that people can triangulate between personal experience and truth claims from science or other institutional sources. So a great deal about climate change has to be taken on trust, at a time when trust in institutional narratives is thin on the ground. And if people can't triangulate directly with experience, then they will create a personalised construct out of the science and their own world view, but that construct is unlikely to have the urgency or standing of an immediately pressing problem.

Two consequences follow from the unpresentability of climate change. First, climate change *per se* is never on the agenda, is never spoken of or acted upon. It is always a version of climate change, a proxy for its inaccessible reality, that is on the table. And that proxy will always be a politicised social construction (*Hulme 2009.17-32; Pettenger 2007*) or a personal construction. (*ER interview*) And secondly, to the extent that that politicisation is mistrusted, or there is a breakdown in trust between individuals, communities and 'the experts', or that individuals and communities feel locked out of the determination of the climate change related issues they are

called to respond to, there will be communicational failures and consequent failures of engagement. ER has it thus:

> *Climate is not a clear and present danger. Its not something that people can directly experience in any shape or form, we rely on institutions to know and to tell us about it in an unbiased way…..*
>
> *There isn't a single reference point; if you take the War on Terror, people do have particular reference points. 9/11. 7/7 in the UK. People can all relate to that. The truck thing in Nice, and the Paris bombings. People have common reference points to which one can always reach back. I think in general, actually, issues are defined by events. So the story of capitalism is punctuated by happenings like the Thatcher Reagan accord, and by the banking crisis; that's what people understand it by. But there isn't a central point of reference, at least in Europe, for climate change.*
>
> *People triangulate against their own experience and the thing about climate is that it's terribly conceptual…it's invisible, it's odourless, it's tasteless, it's entirely mediated by scientific information. And as you've pointed out, that's something people don't have direct access to. So to some extent, to make it a human construct, people have to relate it to their personal experiences a lot more than maybe some other issues like health, or education, or transport, housing or employment, even foreign affairs. So going through that transposition, making it a human construct, it becomes a human construct in individual ways ….*
>
> *I don't see any political change coming purely off the back of climate. Not serious amounts of money. Not serious amounts of intrusive policy. If, on the other hand, where climate is part of a series of rationales for better quality of life; jobs, employment, and part of the rationale, strengthening the argument for doing it, then that is viable, I think.*
>
> (*ER interview*)

Risk and post normality as representations of climate change

Social psychologist MO makes the case for re-framing climate change as an environmental risk, thus allowing comparisons with other known, more immediate, and readily accepted risks, such as risk to human health from particulate air pollution. MO's strategy is designed to pull climate change away from the clutches of its being perceived as absolute or sublime. By rendering it comparable to other more tractable issues, and shifting the focus from its global dimensions to the local, the effect is to bring climate change down to earth, so that we can deal with it, or at least feel we have a chance of dealing with it. The approach resonates well with behavioural studies that show that changes in attitudes towards specific issues occur most easily following relevant real life experience associated with addressing the issue concerned (*Jhangiani & Tarry 2014. 4; Ginter 1974. 30-40*). This suggests that changing attitudes towards climate change in

general, will more likely follow action taken in response to it, at a local level (*Stoknes 2015.1869-3782K).*

Where a problem is characterised by its "scale, complexity, uncertainty, value loading and a plurality of legitimate perspectives" *(Funtowicz & Ravetz 2003.1-2)*, it has been deemed *post normal,* in as far as the science that can be applied to it. I put it to NP, that the risk approach was simply an attempt at normalising something that is inherently post normal, and that the approach was therefore open to question:

> *NG. One of the other things I thought about reframing in terms of risk; you say that climate change is part of a post normality, but by framing it as risk and focussing on the kinds of decisions we need to make, doesn't this, isn't this, just a very powerful way of normalising it?*
> *MO Yes. It changes some of the parameters. But the big danger is that you get the structure of the problem wrong, I guess. But you're right: it normalises it, it manages it, it makes it tractable. But remember the dilemma; that if you make it look intractable, then people aren't going to want to engage with it at all. Which is what most people are doing most of the time. So I guess that's part of the rationale. But I fully accept your criticism. It's one way of looking at it, and it's a partial way. It's not the whole. I suppose you'd want to, as the risk assessor, be scanning for unintended consequences. So you almost need something like a meta-risk controller, who is not a manager of the programme, but who tries to understand what is going on here, and whether there are other aspects of the problem that are going on here, that risk doesn't take account of. Again, the example of the London floods risk assessment, ……they've done the risk analysis, and then gone back to monitoring how tides and sea level are actually changing in the estuary of the Thames. And within a certain period of time they have to make a decision whether or not to replace the barrier, and in some way shore the defences up. But they don't know when. So you're adding a precautionary reflective approach to monitor the situation. To an assessment that's already been done, you will then know in good time, hopefully, what you really need to do. And at that point you make the investment. It's kind of a combination of being more flexible, and one of the options for a post normal situation is to choose to have more flexibility.*
>
> (*MO interview*)

Climate change can be seen as exemplary of the post normal. Constituted as a problem, climate change is multi dimensional, dynamic and riven with uncertainty and ambiguity with multiple interests focussed on its implications. As discussed earlier, climate change even defies definition, other than through an arbitrary fixing of its boundaries. As such 'the problem' of climate change is not solvable. Its post normality demands that we learn to live with it, even while attempting to mitigate its most potentially damaging effects. The framing of climate change within a risk paradigm is designed to rescue climate change, to some degree, from its post normality and render it somewhat tractable. Full tractability is not available to a phenomenon so complex and vast. Arguably, the risk framing opens up the problem, allows for multiple adaptive and continuously evolving strategies that recognise the need for fluidity in our human responses to climate change. The risk framing also brings the means of apprehending climate change closer to

reality, much closer, for example, than the extreme reduction of the IPCC policy definition, that focusses on a single metric of 2 degrees of warming averaged across the globe. But the reduction of the post-normal to a risk framing has been severely criticised as a failure to engage with, or worse, a refusal to admit to the complexities and contingencies that post-normality seeks to highlight as more truly representative of issues that remain, ultimately, sublime *(Saltelli & Giampietro 2016. 62-71).* With respect to the sublime, post normality speaks to the overwhelming and the absolute in the perception of climate change as well as its unpresentability. We might think of the post normal as a half way house between the unpresentable sublime, and the ridiculous reduction of the phenomenon of climate change to a politically convenient metric that dominates the orthodox discourse, with the risk framing situated somewhere between the post normal and that policy metric.

The risk approach to climate change is designed to bring climate change closer, to help us accept and deal with what otherwise might remain too psychologically distant for us to be able to respond to effectively. The approach has arguable merit in connection with institutional and governmental responses to specific impacts related to climate change, through, for example "climate proofed" infrastructural investment, where projects already undergo extensive risk assessments for other factors. However, where we are talking about an across the board response to climate change involving a wholesale transformation to our entire material culture, as CV, McD and BD have argued, the applicability of the risk strategy falls away. In fairness, MO says very clearly, risk cannot address the whole. Climate change is too complex and too multidimensional for that to be possible.

Moral framing as a representation of climate change.

One aspect of the perception of climate change, that MO highlights as an example of its being beyond the reach of risk framing, is the moral dimension. The moral dimension of climate change arises quite naturally, when we invite the sublime into the conversational frame and open ourselves up to climate change's consequences and their extensive and temporal reach. But it turns out that the moral argument appears in as many different guises as there are participants to this research project's conversations. In the literature, the essential moral aspect considered with respect to climate change relates to the asymmetry between those deemed most responsible for its historical causation, and its present day continuation, and those most vulnerable to its effects, who have contributed little or nothing to the cause: the poor of the world and future generations (*Broome 2008).* In her Reith Lecture *The Iron Maiden,* novelist Hilary Mantel compares present day climate change to Elizabethan sin. She sees it as a judgement upon us, because of its moral dimensions. And for many interviewees, far from uplifting them through its sublimity, as Kant would have it, the effect of the sublime of climate change, as experienced through its overwhelming complexity, enormity and unpresentability, is morally corrosive. At least, this is what emerges from many interviews.

To KE, the nub of the moral issue, is taking place right now. It is best seen through the geo-political implications of national energy policies. And we don't need to invoke unfairness to future generations to find the moral issue. It's right here and now:

> *If you import energy that's fine. But the issue for me is; very quietly over the years, we're putting huge pressure on our economy, because we now import about 65% of our raw material needs for our energy from the Middle East. And as a result, we need to export to pay for that. And this is the great hidden discussion that has never come out. Politicians won't talk about it. It's about: what do you export to sure you can pay for the billions of pounds of imports from countries that are particularly politically unstable as well? And we're having to earn cash by selling things to these places. And what do we tend to be selling to them? …..Arms…So you come up with a perfect storm, where you almost create Syria; so we can export the arms so that we can pay for our energy habit....So that's how I think about it …You try and talk about that in the mainstream press..what would they do?*
>
> (*KE interview*)

Of course, concern for the future opens on to a vast moral horizon:

> *We are stewards of the planet, and we should be passing it on to future generations in a viable state, so that they can make of it what they will, and not have to deal with a shattered planet. So that's a moral or religious burden or imperative on us. And if we burn up all the fossil fuels, screwing the climate, we're not just doing ourselves in, but we're doing for all the future generations of this planet. There's a huge moral issue there.*
>
> (*OT interview*)

OT is an Arctic specialist, and I asked him, referring to the phenomenon of the Arctic amplification: "if the Arctic could speak, what would it tell us"? This is his reply:

> *I suppose it would be saying, watch out, look out planet! What's happening to us now, is going to be happening to you soon, because this Arctic amplification of warming means that the Arctic is warming three times as fast as the rest of the planet. So all the big changes that we are seeing, like oceans appearing where they didn't exist before, is extremely dramatic. But the whole planet is going to have these things happening, at different times of course, But what's happening to now is what will happen to you soon. It's like these Renaissance paintings where there's a skull sitting on a desk somewhere, as a moral reminder ..it's there to say the same thing, 'what I am you will be' So in a sense the Arctic is the kind of skull on the desk that is saying, what is happening to us is what will happen to you.*
>
> (*OT interview*)

According to OT many climate scientists despair at what they see as a moral failure by political elites, business leaders and the informed public to respond adequately to their dire warnings:

> *It's impossible that even someone as stupid as Trump can really believe that climate change is a hoax. And it wasn't just him. It was every Republican candidate for the Presidency, more or less had to say that climate change is a hoax or they wouldn't have got to be a candidate, because they were all in the pay of the oil industry. And its sort of sickening because the result of all that is it will delay doing anything to the point when it will be far too late to avoid catastrophic changes. So it*

> *is a sort of despair. The despair is seeing the effectiveness of the actual opposition to doing anything about climate change. It's not just kind of laziness, it's sort of panic action now. It's pure evil now, is in the battle and seems to be winning. Well I don't know what the solution is ..it's saying something pretty horrible about human A lot of people, well climate scientists, are saying: well we deserve to wipe ourselves out. We're not a species that's morally fit to continue. Sometimes I feel that way myself.*
>
> (*OT interview*)

AR takes the view that it is not possible to design a viable present day policy that meets a future moral obligation. There are too many unknowns regarding the future to be able to make a valid moral assessment, given that a sacrifice made today for a benefit that will accrue within an unknowable future, will incur real present social costs:

> *How do you address an issue that may become an issue in 100 years time, now? And I don't think there is a short answer, that there is a solution. You can only make policies on the basis of the currently available information, not on what might happen in 100 or 200 years time. Unless you are very certain that this is inevitable.*
>
> (*AR interview*)

In an interview with MC, a leader in corporate reporting, the discussion turned to stranded assets. If Western society forecloses on the fossil fuel economy, the stock values of corporations holding extensive assets in fossil fuels will likely fall rapidly and there will be further negative effects across companies featured in the Dow Jones and FTSE100s.

> *MC. There are individuals in companies who are paid by companies to consider issues like this, and if you asked top executives of oil companies about this they would say: 'Well if Trump has his way there won't be any stranded assets'. If public spirited people like you and me win, there will be stranded assets….. It's about that simple.*
> *NG. So I suppose the same arguments holds for; if we have no stranded assets we have lots of avoidable deaths. That seems to me to be a very simple equation.*
> *MC. It's a very nasty equation. But the thing is, those deaths are in the future. So it's like they don't exist in a sense. Anybody with any knowledge of this knows that emissions over the next 20 to 30 years won't have any effect for a long time after. So the battle we're fighting now reaches its conclusion around 2100 - 2200, and because we're all going to be dead then, in the nicest possible way, who gives a fuck?*
>
> (*MC interview*)

OG sees the moral argument in terms of lifting people out of poverty. People are suffering and dying right now from acute poverty, and this has to be the overriding moral priority.

> *I'm not opposed in principle to renewable energy. But I think cheap energy is what brings people out of poverty; it's what increases life expectancy and quality of life. I would rather see a strong moral argument for cheap forms of energy. But actually there is a danger that if you have policies that keep energy prices high, you throw society into fuel poverty, and poverty itself, and that is a moral issue.*
>
> (*OG interview*)

ER finds the moral issue, not so much in where the effects of climate change fall, but where the effects of mitigating climate change fall:

> *Are you fighting climate change to preserve biodiversity and protect people's well-being, rights and security, and civilisation? But in order to do this we're going to wipe out virgin territory and throw people off the land to grow trees for carbon capture and storage? Well hang on, means? ends? There's starting to be a disconnect there…You're starting to get a disconnect there because fighting the biofuels fight to stop biofuels becoming a tool of oppression of poor people; it's marginal land ok ,but…..*
>
> (*ER interview*)

For NE, the moral issue is whether or not, once we turn to engineering solutions of either the atmosphere or of controlled benign environments, whether these become commodified or not.

> *What I think is interesting is where these ideas of large scale geo engineering shift from some sort of benign universalising, to one in which the climate itself becomes a commodity. I think the gist is once weather or benign weather becomes scarce, and one can attach property values to it, and likewise for engineered interiorised environments,……So it's interesting and it seems to me that the politics of 'air conditioning' is, in a sense, the big question..the major political question; it's about, engineered habitability, it's about questions of exclusion and inclusion and also the distortions of capitalism and commodification.*
>
> (*NE interview*)

Reviewing these different interpretations of the moral dimensions of climate change, it seems that the tangle it reveals, can best be understood as a contest between what can or cannot reasonably be taken to be immediate and pressing moral issues. We have, for example, a hard enough time dealing with the moral issues belonging to present day energy policy or poverty or rising inequality. Contrast these with issues where distance constitutes a major factor in the moral argument, such as concern for the welfare of future generations. Here the task of resolution seems almost impossible. In the former case, the moral bar is set quite low and the possibility of a political resolution to these issues seems not impossible to entertain. But where distance dominates, whether the distance is temporal, as in the case of future generations, or spatial, as in the case of mass displacements of people from despoiled environments, perceived as being "far flung", the bar is set far higher, perhaps impossibly so. (The migration issue embraces both these categories.) And we can see this clearly in the above illustrations. The greatest urgency to act is seen in relation to immediate and present concerns. Moral despair is felt most keenly, where the horizon of concern stretches furthest into the distance.

In certain respects, the sublime perception of climate change mitigates against the resolution of moral concerns because it throws our attention onto moral issues characterised by their complexity and spatial and temporal vastness. And it is significant that the majority of climate scientists interviewed, whose day to day awareness of the scale and complexities of climate change is most acute, are those most prone to admit to moral despair.

The apocalypse as a representation of climate change

However, we do not need expertise, to feel a sense of moral failure when considering global climate change. The sublime, in the guise of apocalypse, will do that job perfectly well on its own. And it is because climate change, is widely viewed in an apocalyptic sense *(Swingedouw 2010. 16-20)* but note also the films; The Day After Tomorrow, The Road, Nostalgia.) and treated as such in its media representations, that Hilary Mantel is able to view it as a judgement on us, and like the mediaeval sense of sin, potentially a final judgement, for which we have no Redeemer.

Discussing the apocalyptic vision with AR it emerges that the apocalyptic is actually deeply entangled within our scientific perceptions of climate change. Key to AR's thinking on climate change is that the science has become mixed up with perennial fears for the survival of human civilisation; fears that date back to foundational myths such as the Biblical Flood. This mixing up has emerged through fairly recent Earth history science, which has demonstrated that throughout Earth's history, huge instability of the global climate has been the rule, rather than the traditional Enlightenment view of a more harmonious and predictable mechanical understanding of the cosmos. So in a sense, says AR, there has been a return to mediaeval style apocalyptic angst, now driven by science and fear of asteroid strikes and climate tipping points, rather than the Book of Revelations and the Black Death. AR argues that such apocalyptic thinking has served to de-democratise discussion on climate change, and to close out contrarian opinion and evidence. The radicalisation of normal climate science serves to rule out potential argument or evidence presented as possible falsification of the scientific orthodoxy. In other words, contrarian views of climate change are regarded as heresy and subject to Inquisition.

> *AR. In my view, the first step in that direction was to discover significant climate change events in the past. So analysing climate records in the in geological time and in ice cores, showed that there have been periods in the past where significant climate change events had occurred. The most obvious is the ice ages, which have occurred over time. And so the view emerged that the climate is not so stable as we once thought. So this fear, that even the climate can be tipped into some sort of catastrophic mode scenario by our activities emerged. And this is one of the kind of apocalyptic views that the climate is very, very sensitive to what we do, and we can tip it by our activities into some kind of global catastrophic mode.*
> *NG. And some people, obviously, believe this is there case?*
> *AR. Oh, absolutely. Many, many people believe it. And it is basically what pupils are being told in school. We are destroying the planet. You ask young people today; they talk as though we live in the Middle Ages. We are essentially destroying the planet through our actions.*
>
> (*AR interview*)

This erosion of background, as Timothy Morton has it (*Morton 2013.1370; 1799 K)*, where the assumption no longer holds, of a viable planet acting as a backdrop to whatever we might do; this has the effect of cutting us off from our moral moorings and throwing us full pelt, as we see it, into

the contingent presence of a dying planet, a planet that we ourselves have despoiled. As KE notes:

> *….what we are now, is a super race, as compared to a thousand years ago; the super race that is now dominating the planet …All those horrific movies about aliens coming here to rape and pillage the planet, ..that's us!*
>
> (*KE interview*)

Cut loose and with no moral bearings to guide us, we are swept up into the apocalyptic vision.

The appreciative sublime: the calling of climate change.

The sense of impending moral failure associated with apocalyptic climate change is counter-balanced, in these interviews, by an alternative sense that we can rise to meet the moral challenge. Those interviewees, most closely engaged in relatively small scale practical initiatives, currently delivering positive change, are the most energised and the most hopeful. Entrepreneurs and those involved in regeneration projects are, for example, as a group, much more optimistic that change can be delivered, than academics caught in their visions of global systemic breakdown. And interestingly, for this research project, those practically engaged in positive change projects, tend to feel that the sublime works for them, they feel that it is on their side. This sense is difficult to pin down in explicit quotations; it comes across during interviews more as a feeling that underlies what is being said at certain points. For example, during my interview with McD, it comes through powerfully, that if only we were to awaken to it, our belonging to the Earth, as part of its being alive, is more than we could ever wish for:

> *NG. There's a not exactly unspoken, but certainly not publicly spoken of, in many circles, anxiety, that we're not acknowledging that climate change represents something else. Or it's pointing at some aspect of humanity, that is perhaps fundamentally misplaced, or out of joint. This is why I asked you first of all, about BuckMinster Fuller working for 100% of humanity. A lot of these conversations just go to: well, what is this humanity that we're trying to bring through, for which, climate change seems to be, almost a sort of trigger? We have to address climate change, but that's not the real meat of it. The real meat is something profoundly to do with the human. So when, in the BuckMinster Fuller thing, you're working for 100% of humanity, what does that mean? What is the humanity that we're trying to work towards?*
> *McD. The inevitable answer for me (laughs) is that the human boundaries become a primary question. Humans do not exist in isolation from the totality of the living systems of this planet. So if there is any hope whatsoever for a true non zero sum game, of the human race, then the true primary focus has to be on the overall health and well-being of the planet Earth. I do not subscribe to a lot of the science fiction fantasies of the separation of humanity being downloaded into computers and we will be able to travel the galaxies. I think that the particular conditions that*

> *we have within this planetary system, are so remarkable, that we're just beginning to understand (laughs) how many contingent factors there are that enable our very existence. There's been a lot of existential angst around that, because there is deeply engrained within mediaeval Christianity, there are ideas of transcending and escaping the planet to better worlds. And I think that's still engrained in some kinds of scientific mythologies. And the realisation that we are situated in this place, and the very effort towards health and well being at the individual level is contained within planetary health is more than enough for us.*
>
> (*McD interview*)

SM senses his alignment to what he feels is the directionality within the Earth's history:

> *I'm putting stuff out through the books, through the on-line course, through my work, I hope, because a lot of my work is really about trying to better understand the coupled evolution of life on the planet. OK its scientific work, but there are plenty of times, through my journalist friends, I'm getting that message out. So I really enjoy the fact that,…you probably would label me a climate scientist, but I'm a professor of Earth Systems science and climate change; I probably spend more time trying to understand the coupled evolution of life, and get those extraordinary scientific stories out there. I'm not perfectly at peace with myself, who is; but on some level I'm at peace with the fact that my work is aligned with whatever you want to call it -*
>
> (*SM interview*)

> *I picked up my copy of the Guardian weekly and saw the latest kind of Arctic climate apocalypse, with all the usual suspects; my friends, Jim Hansen or whoever, just pedalling the same old ..ramping up the anti of just how bad this is. All good stuff that I know about. But yes, it's frustrating to me, because I don't think its going to ..it's a sort of lost mess, if I'm going to be honest. We know it's not really gaining traction for the way we want to change collective action. We have to find something deeper, if we're going to change course. That's my view anyway.*
>
> (*ibid)*

A powerful sense coming through the BD interview was that when he says we have to question everything to get to the point of singularity in the transition, he means *everything* and he means really *question:*

> *So this transformation that we are in, and this applies to all transformations, is that we have to question everything; every assumption of what we believe to be basically true across all aspects of our society…..When you're right on the leading edge of change, you really have no idea of what is going to emerge next. And if we try to explain it, that can actually delay the change you're looking for. When we use language and constructs drawn from the past, that can hold things up, and that's one of your barriers that you were talking about. We don't have ways to explain this transition; the lexicon of metaphors, similes and language that we have is all from the previous paradigm.*
>
> (*BD interview*)

DW, sees in the regenerative capacity of the Earth, a potential resolution to the climate change dilemma, but only if we fully take up, what he sees is our true position as participant agents within the whole Earth system. And that participation includes alignment with the sublime:

> *I fundamentally believe that this whole level of looking at competition in this, comes from the reductionist mindset. If you make a distinction between the observer and the observed, so that you have things that you can look at, then you have a mistaken way in which parts and wholes work together. So it's natural then, that you see competition everywhere. Now if you really take a holistic perspective, in which we ourselves are part of a larger body, then …You can say that the prime endeavour of Western civilisation is immortality.. which singularly, the space race and all that, personifies. But if you see from a fully holistic perspective, you are falling into the sublime participation; in recognising your own immortally immediately, because you're part of life..*
>
> (*CV interview*)

For CV, this 'sublime participation' best manifests through tangible projects. There are hundreds of examples of regenerative permaculture projects that demonstrate the extraordinary capacity for the Earth system to regenerate from a despoiled condition and sequester carbon in the process. During my interview with CV, I tried to counter his enthusiasm for the Earth's regenerative potential by pointing at some hard truths about the human condition. I used Syria for my example. This is CV's response:

> *Syria? Yes. You can go back to the oldest written text of humanity, the Gilgamesh. When you read it with the eyes of an ecologist, it is a story of down-wind desertification. Don't cut down the cedars of the Lebanon or I'll make your waters, your rivers run dry, and the land will go salty. It's what happens when you cut down trees. Down wind, you get desertification. So the one of the infertile Middle East, rather than the fertile crescent, is a human environmental disaster that needs to be remedied to stop both our war with nature, and our war with each other. The reason why the three religions of the Book came out of that area, and are killing each other, is ultimately the story that Gilgamesh tells; of those lands becoming scarce rather than abundant, in terms of their productiveness. So one of the core regenerative projects, there are people seeding this meme in the right places, is reforesting the fertile crescent. So seeding this in the right places means talking to the Vatican and the Pope and the open minded religious leaders of all faiths about this; creating a movement of telling that story of: we go back to reforest these deserts, and we turn the core of strife of our war with nature and each other on it's head…*
>
> (*CV interview*)

For these interviewees, their sense of the sublime fuels an unstoppable optimism:

> *What I've been trying to do, and my colleagues in CDP, is to get thousands and thousands of large businesses, world-wide focussing on this. You know there's a rather good film I'd commend to you called Amazing Grace, which is about Wilberforce and the abolition of slavery. You know the despicable behaviour of the slave companies. The analogy I suppose, that relates to CDP is that we ask companies to report their greenhouse gas emissions. If we were concerned with the abolition of slavery, we'd be asking them to report how many slaves they had, how many succumbed to disease, how many committed suicide, how many were murdered. And their provision of this sort of data gives you an ugh! I didn't realise things were quite like that. So we're involved in collectively raising each other's consciousness about this. Your excellent work may find its way to becoming a documentary or newspaper articles or both, that will help people conceive in a new way, regarding this problem. I mean, there is no doubt in any of our minds, that at some point the bombs are going to be falling visibly enough, and then everyone's going to be*

> *working on climate change. The game in our lifetime is to bring that day forward, very considerably, so that the worst impacts are mitigated as far as possible.*
>
> (*MC interview*)

W*hat we think we know*.

Tsang describes the sublime as being encountered, or acting at both the zenith and the nadir of human consciousness (*Tsang 1998. 38-42)*. At the pinnacle of moral ambition we sense the sublime urging us forward through its silent inspiration. And at the nadir, in despair at our frailty, there it is again, draining the last ounce of hope from us, and serving it back to us in desperate fantasy. The findings from this research, as exemplified in the above quotes, confirm Tsang's approach. It is the sublime as apocalypse that animates despair and it is the sublime as appreciation, that drives the will to reconfigure the human presence on Earth. It is as though, and this is my sense, garnered from all of the research focussed on to this project, that human consciousness is held within the sublime; that wherever we push to the boundary, and that boundary is always immediate, the sublime is already there, waiting for us. Such a sublime, is neither transcendent nor immanent, but both simultaneously, and neither at the same time. And this suggests in turn that, in as far as we are conscious of climate change, it likewise, is held within the sublime. CV makes the point that, at the limit, the distinction between consciousness and matter can no longer be made; this means that the physicality of climate change is not immune to the sublime influence:

> *…in a world that is fundamentally unpredictable and uncontrollable, one interconnected complex dynamic system, where we don't even know the exact interaction between consciousness and matter; for all those things, ultimately, we have to accept that we don't know. It means that suddenly, you shift the core endeavour of science..... from prediction and control and manipulation of the living world out there, to acknowledging our participatory agency within the larger whole.*
>
> (*CV interview*)

And this in turn implies a fundamental change around with how we should regard climate change. We should heed BD's warning that as we approach the point of critical change, all of what we know that belongs to the failing paradigm must be called into question:

> *I now know that whatever I am proposing can only be a partial and temporal solution from a limited perspective. And history teaches us that most solutions made by well meaning people at any one time, sooner or later turns into problems - they have unintended side effects as the system as a whole changed - So they become inappropriate and that means……OK I'm going to talk about solutions here, but the invitation is to not take them too seriously because we need to keep asking better questions to improve on those solutions. So suddenly answers and solutions become transient means towards asking better questions about what is appropriate.*
>
> (CV interview)

The sublime of climate change tells us that what we think we know of climate change can never be climate change itself. That however we respond to it, our responses will fall short of the mark and that the worst we can do for climate change is to close down its discourse through an imposed orthodoxy. Rather, we should open up the discourse; open it to the sublime. To do that, we must first open ourselves. As McD has it:

> *What I think is the truly sublime, which is this complex interactive dynamic system - the total planetary entity/organism, whatever you want to call it - space ship, whatever you want to use..That's the truly, the most sublime thing I can imagine, because in so many ways its unimaginable. And so we're constantly having to come up with our own heuristics in order to be able to think about it. And so by reducing the extraordinary complexity and beauty and even horror of the whole system, to just climate change, to induce anxiety around that, so it operates at the level of fear, I think it does a disservice to the sublime, which is a much more omni-directional experience (laughs) than simply what can be contained within this one concept.*
>
> (McD interview)

The post-modern sublime and the shifting nature of the safe place

In her interview, the philosopher DC describes the sense in which she believes the sublime can be used to good effect to bring out key aspects of climate change. DC says:

> *My own definition/position of what the sublime is, as a concept: I think it's useful because it enables us to conceptualise an idea that's beyond our ken, beyond our ability to take it in. So that's the sense in which the sublime is a useful concept. So if you think about climate change in temporal terms, we have some ideas of the past, when we started seeing climate change, we have some ideas about that, but what lies ahead of us is a lot of uncertainty. The scale and the scope of change, and the widespread effects across the Earth and the atmosphere, of course, are the stuff of the sublime. Our attempts to take on board all this huge crisis, well the sublime, I mean, even the data we have is a struggle for us to take in. And this creates a sense of anxiety, that something that's greater and more powerful than ourselves, but that we've had quite a major hand in creating, is going to overwhelm us. So the temporal and spatial effects of climate change create this idea that here's climate change and its beyond our ken.*
>
> (*DC interview*)

Then DC turns to how the sublime might not be so useful:

> *Where I think climate change doesn't fit with the concept of the sublime entirely, it's where pleasure doesn't fit with climate change,…I think the sublime is more anxious pleasure, the beautiful is a more straight forward pleasurable response..but with the sublime, we're seeing the tragic effects of the sublime all around us, so to see the idea of a response as pleasure, even if its an anxious pleasure, is a bit problematic.*
>
> (*DC interview*)

In classical accounts of the sublime, pleasure arises through the sense of ennoblement the sublime brings to its witnesses. It is as though some of the grandeur of what is beheld is transferred to the beholder. This sense is associated, right from the start, in Longinus, with the orator and his listeners, both being lifted out of themselves, through the sublime effect. The pleasure comes through the dual aspect of the sublime that Tsang describes (*Tsang 1998.59*). And this sense continues on through the Enlightenment and Romantic writers on the sublime. But in the 20th and 21st century sublime, the notion of pleasure becomes increasingly problematised. It is difficult, for example to locate, even 'troubled pleasure' (*Soper 1990*) with Jameson's writings on the sublimity of totalising capitalist exploitation, other than of course if one happens to belong to the "one percent" of its elite beneficiaries. Likewise with Morton's sense of engulfment by the hyper-object, whose dimensions defy our imaginations.

Part of the reason for the disappearance of pleasure from the sublime is because of the shifting nature of the *safe place,* the view point, from which the overwhelming spectacle is observed in the classical sublime. In more recent writings on the sublime, the safe place is effectively abolished in favour of engulfment by the techno hyper-space through which the sublime is dimly beheld. Jameson writes:

> *our faulty representations of some immense communicational and computer network are themselves but a distorted figuration of something even deeper, namely, the whole world system of a present-day multinational capitalism. The technology of contemporary society is therefore mesmerising and fascinating not so much in its own right but because it seems to offer some privileged representational shorthand for grasping a network of power and control even more difficult for our minds and imaginations to grasp: the whole new de-centred global network of the third stage of capital itself……It is in terms of that enormous and threatening, yet only dimly perceivable, other reality of economic and social institutions that, in my opinion, the postmodern sublime can alone be adequately theorised.*
>
> (*Jameson 1991.36/7*)

Jameson writes of the pervasive market within which all is reduced to its exchange value, and for which all of nature, including climate change, and all of humanity, including its thought output, are reduced to feedstock, under the capitalist hegemony (*ibid).* In my interview with him, MC offered some aptly discomfiting insights into Jameson's "dimly perceivable other reality"

> *I think it's important to grasp that the corporation is very, very complex. I would say it's an extremely new, novel thing in the world that we hardly know at all. You know, governments have been running the world for thousands of years. We take for granted the separation of powers, legislatures and God knows what, but corporations have been running the world for the past 50 or 100 years and I don't even think they've achieved human consciousness yet… So people running corporations are in a very unrealistic position. On the one hand they'll talk like we're talking (about climate change) but on the other, their salaries depend on a system that isn't really conscious. You could say that corporations are like moles, and they grope towards this thing called profit, but they are largely brainless. Your body*

> *consists of lots of living cells which are brainless but together they make something human. Whereas a corporation is made up of lots of humans and together they make a brainless mole (laughs) I don't frankly think there is much to be gained from them through the powers of persuasion….*
>
> (*MC interview*)

And for the capitalist hegemony to prevail and continue to expand, more and more, nature has to be brought within the market sphere. And for that to happen it must be financialised:

> *NG. People talk about, we need to raise awareness, we need to raise consciousness of the predicament that humanity, and indeed the whole planet seems to be in. One of the responses to this is to monetise the whole problem. In order to make it amenable to corporate response, we have to reduce the reality to a money equivalent.. and in a sense through this, the whole thing has to disappear..*
>
> *MC. You were talking about monetisation and such..and in effect making things go away. Can I challenge that slightly. I think that what's at the heart of what I've been studying is that we have surrendered political philosophy to something that I call financial materialisation. We've had to come to terms with living without God and one of the ways that we've come to terms with it, is by drawing on an economic or financial rationale. And that economic and financial rationale has enormous truth power because it's based on mathematics which has an internal truth to it that is irrefutable. If I make £4 of profit that's twice as much as £2 of profit. If I happen to be making it out of cigarettes, the market does not involve itself in that consideration. So the market is a mechanism for absolving..markets are mechanisms for substituting finance for social and political debate.*
>
> (*ibid*)

In the above, MC reveals a deep paradox that connects to the sublime. If the turn to financialisation is a cultural making good for the absence of what we would once have thought of as divine truth, then its substitution today by mathematical truth, - the substitution of one absolute truth for another - as MC puts it, becomes the ultimate source of power behind financialisation. But then, does not that substitution entail a sacrifice of intuitive wonder and aesthetic sensibility in the name of managerial efficacy and market prioritisation? And in this way, as nature - and climate change would be included here -becomes calculable and thereby manageable, does it not consequentially disappear as the natural? And in that disappearance, is what is lost not our very recourse to the sublime of nature? As the techno postmodern sublime suffuses the natural, it seems perforce we must sacrifice, or at least relegate the priority given to the appreciative sublime. If corporate hegemony is to be our route to surviving climate change, is it not deeply paradoxical that such a survival depends on the sacrifice of possibly *the crucial ingredient* that is driving inspirational regenerative initiatives to address climate change.

Or is the reduction of the natural to the financeable, actually a sublime effect in itself; a deflection, a looking away from the natural sublime that we cannot afford to accept? And in that case, must not our calculated responses to the perturbation in the natural inevitably fall short of what is being demanded of us?

With the erosion of the safe place of the classical sublime, goes the sense of ennoblement associated with the sublime and its replacement by a managerial ethos. The hyper-space of the post-modern sublime runs right through us; it is simultaneously internal to us and external. In the tranche 1 interviews, most interviewees expressed acute frustration at not being able to see beyond the ubiquity of hegemonic capitalism. And climate change is like that too. As a consequence of that hegemony, climate change is already part of our our day to day thinking, part of our postmodern sense of being in the world, part of our calculation of value, even as we dismiss or ignore it, albeit we do so, most of the time, without a thought. So any sense of safe place that we might have within the contemporary sublime is largely illusionary. We can look upon the loss of Arctic ice, for example, feel its horror and majesty, but we look from what we take to be a safe distance and contrive to imagine the transition is not happening to us. But it is. The phenomenon that appears to us as belonging to those northerly realms is already present within our consciousness, and we feel, or decline to feel its loss. But from such a safe place, there can be no moral uplift. As Morton has it, the effect of deceiving ourselves that we can effect a distance from the hyper object, is to make hypocrites of us all. (*Morton 2013.189K)*

We can conclude that the classical sublime, with its insistence on the safe place, and the moral elevation of the sublime witness, is not a fit vehicle through which we can try to come to terms with contemporary climate change. But the contemporary, post modern, suffused sublime very much is; even, as we have seen, is the sublime in its popular usage as the secular divine.

Conclusion

In this chapter I have argued that climate change can be understood as sublime, in terms of its spatial and temporal vastness, its hyper-objectivity, its potential to overwhelm us, its unpresentability, its complexity, its summoning of the appreciative within us, and its post-modern suffused techno hyper-spatiality. The multi facetted vision of climate change that these polythetic sublime perspectives offer, confirm analyses of climate change that present it as wicked *(Rittel & Webber 1973*), or super-wicked (*Levin et al 2012*) or post-normal (*Funtowicz & Ravetz 2003*) but with the additional insights of the importance of the appreciative mode of human consciousness for designing responses to climate change, and the possibly fatal shortfall of responding to climate change as a financeable enterprise.

There is no final agreement among these interviewees as to the true nature of climate change, or how we might best respond to it. The interviews show a wide diversity of perspective, even with regard to the definition of what we are actually faced with, let alone what to do about it. Nonetheless, the foregoing demonstrates that when climate change is put forward for discussion

with reference to the sublime, it is possible for expert practitioners to produce profound insights into the predicament that climate change presents us with; insights that a discourse that excludes the sublime perspective, would be most unlikely to reveal.

For detailed discussion of the findings from the foregoing and their implications, please see Chapter 3: Findings and Implications.

Chapter 7 Review

Zizek uses the term *sublime object (Zizek 1989)* to encapsulate his discussion of ideology. It is a neat summation because it renders the sublime as an object of consciousness and thereby sidesteps the duality issue: the sublime as object of consciousness is both subjective and objective at the same time.

In certain important respects climate change is an ideology in its own right *(Taylor 2009.17).* But it is also part of a grander ideology, in the sense that its presentation to us through its orthodox discourse is one that places it in relationship to the hegemony of global market capitalism. On both counts, this makes it, in Zizekian terms, a strong candidate for being a sublime object. As such, climate change exists for us in a way that more ordinary objects such as snow storms or traffic jams or ice cream do not. It occupies a special position for us and stands apart from the every day.

In my interview with NS, he likens climate change to his own death. In this sense climate change is an emissary of finitude, just as is our own death. It is neither real nor not real. We know we will die, but our death is not real because it has not occurred, nor can it occur to us who will be extinguished in it. Arguably death is the ultimate sublime object, and because of this, says NS, for as long as we are healthy, we cannot fully give it the consideration that perhaps it deserves. Even more, it is arguable that we are given not to be able to do so.

For all its vast materiality then, climate change is arguably sublime and functions as a sublime object, as something that stands apart, is somehow terribly important to us but not necessarily in ways that we can understand. Zizek makes this point on behalf of all political ideologies that: to the extent we are subject to them, we are given to revere, but not to understand or have the measure of their sublime objects. If we are Amercian, for example, we may object strongly to the person of the President of the United Sates, while still holding the institution of the Presidency in the highest regard.

Sublime objects, like our own death, like the institution of the Presidency, like climate change, cannot be directly apprehended. We are either deflected by their grandeur or they are mysteriously withdrawn from us while still being able to exert enormous influence over us. We fear their emissaries because for all their power, they are as nothing compared to the power of the sublime object that lies behind them.

In this thesis I have sought to establish the credibility of the sublime of climate change and demonstrate the implications for us, of that sublimity. I have sought especially to argue that to the extent that we fail to recognise the sublime of climate change and respond to it only in terms of its materiality, we will miss, or misread the signal being sent to us by the planet which bears us.

I have sought to give credibility to my case by inviting others to explore what it might mean, and have uncovered a hunger among some of them to come closer to what the sublime of climate change might imply, both with respect to meaning and to feeling.

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Appendices

1. Invitation text.

The following text is an example of an invitation to take part in the research for this thesis. For each invitation, the central text would be introduced with a very brief personalised reference to the prospective interviewee's publications that were relevant to the thesis subject, or their role in

business or public life and how that was relevant. So it was made very clear to each prospective interviewee why they were being asked to take part in the research project.

Critically important, in my view, for unsolicited invitations sent by email, was the email header. This had to be immediately arresting, in order that the recipient would be "teased into" opening it, given that the sender's name (mine) would almost certainly have meant nothing to the recipient. My email headers varied in their precise wording (dictated by whim for the most part) but were all based around the core theme:

> *science and the sublime: the challenge of communicating climate change. Request for doctoral research interview.*

Dear Professor ……..

First of all, my deepest thanks for writing "……" I found the book deeply affective and informative.

Climate change presents us, not just with formidable science, technology and economic challenges, but with communication challenges that are, in their own way, their equal.

Despite a scientific consensus, and an international agreement to keep emissions of greenhouse gasses below dangerous levels, the real world situation continues to worsen at an accelerating pace. It is as though, for the large part, humanity is turning a blind eye and a deaf ear, to climate change.

The questions then arise; is global climate change just too big and thorny a problem for us to solve? Are we in some ways already overwhelmed by it, even before it manifests its full intensity? Are we missing something fundamental in our characterisations of climate change?

My research explores such questions using the heuristic; 'science and the sublime'. The science, on one level is very straight forward and undisputed. On another, it is fiendishly complex. The sublime is the unavoidable human response to the overwhelmingly vast and powerful. We step back if we can, to a place of safety; and if we can't, we feign disbelief.

Pursuing these themes, I am holding one to one recorded discussions with leaders from science, technology, business and policy communities who are already playing a significant role, positively responding to the challenges of climate change. These discussions seek to uncover relationships between perceptions of climate change and our willingness to act on it, so that we can better understand how to communicate with one another on this most critical issue.

I would be honoured and thrilled if you would agree to take part in one of these discussions with me. You would need to set a side an hour for this. I will come to wherever is convenient for you to meet at a time that again, suits you.

Your contribution to this research would inform my doctoral thesis. The project is being supervised by Professors Andrew Stirling and Jane Cowan of the University of Sussex.

I look forward to hearing from you

Restrictions and confidentiality.

Research discussions (unstructured interviews) will be held under Chatham House rules. Information taken from the recorded discussions will be used exclusively for the furtherance of the research project. However such information shall be non attributable. The identities of all participants in the research project will be protected. Research participants (interviewees) may withdraw from the project at any point during the research process prior to submission of the final thesis. In the case of withdrawal, all recordings, transcriptions and information derived therefrom, will be removed from the thesis submission and destroyed. All information used as part of the research project will be held under conditions that comply with UK Data Protection Law.

2. Anonymised interviewees.

Tranche 1 interviewees.

LT is Emeritus Professor at a European institute for the study of social transformations and is Professor of Humanities, Arts and Languages at a University in London. LT has published on climate change related issues, the philosophy of nature and on the sublime. (Gender: female)

KC is an established artist, art historian and encyclopedist. KC's work and writing on the sublime featured in Tate Modern's *The Art of the Sublime* 2008. KC is a consultant to the BBC series *Civilisations.* (Gender: male)

QK is a Research Fellow in Science Policy Studies at a British University. QK's research speciality is in nuclear related issues. QK holds a PhD in public engagement with nuclear power. (Gender: male)

DT is a Senior Researcher at an international NGO focussed on climate change communications. DT's published work has focussed on social and political constructions of climate change. DT holds a PhD in Science policy studies. (Gender: male)

NS is Emeritus Reader in English at a British University. He has published on 18th and 19th century English literature and the sublime. NS holds a PhD in English Literature. (Gender: male)

OPK is an Anglican Vicar, Broadcaster and Writer. OPK has published prose and poetry on environmental and religious subjects and has written and presented TV documentaries on English religious history, world faiths and the environment. (Gender: male)

Tranche 2 interviewees.

SM is a Professor of Earth System Science and Climate Change at a British university. He has published extensively in both fields. (Gender: male)

BD is a Senior Consultant to an international institute focussed on holistic management. BD is a specialist in organisational change. (Gender: male)

CV is an internationally recognised writer, educator and consultant in holistic and regenerative design for sustainability. CV is a Fellow of the Royal Society for Arts. CV has published extensively on the theme of design for sustainability. CV holds a PhD in systems design. (Gender: male)

OT is a Professor of Ocean Physics and a former Director of an internationally recognised polar studies institute. OT is a world recognised authority on Polar sea ice. OT's latest book discusses the demise of Arctic sea ice. (Gender: male)

OG is a Bishop of the Church of England and a trustee of a climate change focussed think tank. OG holds a PhD in Chemistry. (Gender: male)

NT is Director of an internationally recognised polar studies institute, is a Fellow of CIRES and Professor of Distinction at an American university. NT is a world authority on Polar environments. (Gender: male)

AR is Director of a climate change studies institute. AR is founder and editor of the world's largest climate change online network. AR holds a PhD in social anthropology. (Gender: male)

LB is Deputy Director of a climate change studies institute and is a Professor of Energy and Climate Change at a British University. LB is an authority on climate change mitigation. (Gender: male)

McD is a specialist in global visualisation and is Co-Chair of an internationally recognised American design institute. McD holds a PhD in planetary visualisation from the World Collegium at the University of Plymouth. (Gender: male)

ER is Science Director of an internationally recognised NGO. ER holds a PhD in atmospheric chemistry. (Gender: male)

KS is Head of Policy in a division of the UK FCO. KS is a Fellow of the Royal Geographical Society. (Gender: female)

KE is the CEO of an electricity supply company. KE holds an OBE. (Gender: female)

MO is a Professor of Environmental Psychology at a British university. MO has published extensively on the subject of environmental risk. (Gender: male)

NE is a Professor of Architectural Theory at a British university. NE' published work is focussed in the trans-disciplinary field Architecture, Media and Philosophy. (Gender: male)

DC is a Professor of Environmental Ethics at a British university. DC has published in the fields of environmental ethics, aesthetics including the sublime. (Gender: female)

MC is Chair of an international NGO focussed on corporate disclosure. (Gender: male)