

Navigating the Anthropocene:

A study of audience experiences with three creative interventions

Clare Louise Martynski

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Dedication

This thesis is dedicated to my dear Granny and beloved Uncle William, both of whom sadly passed away before the completion of this project.

Mary Patricia Hone

William Henry Callow

Two extremely different characters who both played such important roles in shaping the person I am today – testament to the value of seeing the world from different perspectives.

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Abstract

This thesis presents an exploration of audience engagement with three artworks that each propose to aid our understanding and navigation of the Anthropocene. The impact of human activity on the planet has reached such a scale that geologists suggest the Earth has entered a new epoch: the Anthropocene. This notion, of humanity as a geological force, can be considered a philosophical, ethical and existential juncture of global importance. Art, particularly that which involves an aspect of interactivity, can draw our attention to the power of this juncture and play a role in our navigation of this moment. Though much has been written about the characteristics of art that enable this role to be played, there has been less exploration of how an audience beyond the academy experiences this work. As such, our understanding of how these works operate in practice is limited. This thesis contends that art can play a singular role in creating space for reflection and dialogue, and as a prompt to action, but I show that audience engagement is an under-explored yet vital dimension of Anthropocene art.

The research I present here explores experiences with three artworks: *Coral Empathy Device* (Austen, 2016), *Deep Time Walk* (Deep Time Walk C.I.C., 2016), and *Time and Tide Bell* (Vergette, 2007). Insight drawn from rich conversations with research participants indicate that though interactions with art may aid existential reflection and collective action in the face of the Anthropocene, it is important to recognise that it operates within a broader system, with legacies activated and extended, or countered and dismissed, by the previous and subsequent experiences of an audience. I argue that acknowledging and embracing this connectedness may extend the legacies of these artworks and enhance the role they might play at this significant moment in human, and planetary, history.

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Chapter 1 Introduction

This research project brings together the idea of humanity as a geological force with the study of audience experiences with art. It offers an important window into how art might offer us different ways of knowing and living within our current times of the Anthropocene. This introductory chapter sets the scene for the remainder of the thesis. It starts by locating the research in the broader context of unprecedented environmental destruction that has resulted from human activity and the abject failure of human society to stem, let alone rectify, this destruction. I then hone in on my research focus: the nascent but growing field of Anthropocene art. As this research is set on exploring how experiences with art function in practice, voices of the audiences of such artworks are placed firmly at the centre. I present my focus on three case studies and briefly introduce intuitive inquiry as my chosen methodological approach, before sharing how I have drawn upon the work of various theorists. Finally, I offer an outline of the thesis structure along with brief summaries of the content. For clarity, I finish by defining some key terms.

1.1 Context

Human activity has impacted planet Earth to such an extent that scientists argue we have moved into a new geological epoch. The Anthropocene, a notion that first emerged at the turn of the millennium, names humanity as a dominant planetary force, physically shaping the face of the Earth and shifting the composition of the atmosphere. If formalised, the Anthropocene will become the third interval of geologic time in the Quaternary Period, which began 2.6 million years ago (Subcommission on Quaternary Stratigraphy, n.d.). It would move us beyond the Holocene, the epochal interval that has offered viable operating conditions for humanity and a multitude of other animal and plant species. Many of the changes that are currently being observed in Earth systems already exceed natural variability of the Quaternary, the only geological period in which the human species has existed (Zalasiewicz, Waters, Summerhayes, et al., 2017).

This notion of humanity as a geological force has resonated broadly, across the sciences, humanities, and into popular culture. Various interpretations and occasional discrediting, the term is rich with theoretical possibilities and very real implications that reach far beyond its geological roots. It begins to join up what are often loosely

associated environmental problems including climate change,¹ resource scarcity, industrial and domestic pollution, biodiversity loss, soil degradation, as well as social challenges like increasing polarisation and the accelerating gap between rich and poor. The temporal implications begin to stretch our sights both back into deep time² and ahead into futurity, to anticipate the trail of contemporary decisions. In this thesis I focus on the Anthropocene as a juncture for reflection on not just how we might do or think, but how we might *exist* differently, with the planet and with each other. In Chapter 2 I present a fuller discussion of the Anthropocene as a geological period, along with the science and debates that underpin its designation.

Ultimately, any disruption to Earth systems has vast consequences that threaten the very foundations of human and nonhuman populations, and levels of concern amongst the public about Anthropocene issues such as climate change are, understandably, high (Ipsos MORI, 2019). Yet, despite these Anthropocene trajectories having been charted for decades, responsive action to date has been far from commensurate with the complexity or scale of the challenges. The information deficit model has, in this case, appeared not to hold, as increasing levels of scientific evidence have not led to increasing levels of remedial activity. Despite all this knowledge, now is a time of “refusing to know and to cultivate the capacity of response-ability; of refusing to be present in and to intruding catastrophe in time; of unprecedented looking away” (Haraway, 2016, p.35). This is a refusal that takes us deeper into an unknown future as Earthly systems become altered beyond points of return, unlocking feedback loops, pushing beyond thresholds of the planet and of our understanding.

Considering that this accretion of knowledge – of such volume that enables the delineation of a new geological epoch – has thus far been an insufficient motivator of active change, it is prudent to consider other ways in which we may look toward and become present to the realities of the Anthropocene, and begin unpicking its complexities. Thus, rather than focus solely on *what* we need to know, this thesis also places a focus on the *how* of this knowing, turning to experiences with art. This is not an attempt to challenge or discredit scientific endeavour, but rather a proposal that we expand our ways of understanding, conceptualising and navigating the Anthropocene. As Neal (2015, p.75) points out, when “facts and figures alone cannot catalyse all the shifts needed in our world, the arts open us to different ways of seeing and feeling”. In this thesis I look particularly at works of art that engage with themes of the

¹ I outline why I choose to use this term rather than ‘climate crisis’ or ‘climate emergency’ later in this chapter.

² ‘Deep time’ is the concept of geological time (rather than human-scale time) developed by James Hutton in the 18th century.

Anthropocene and explore what experiences with such creative endeavours offer an audience at this point of planetary juncture.

Another context to consider here is that of the researcher. I was drawn to this doctoral research as a route to uniting my previous career paths. An early career in performance production was superseded by a number of years in sustainability consultancy, a move driven by an acute awareness of both local and global environmental challenges. Yet, throughout my time in the field of sustainability, I remained convinced of the power of the arts and believed it had an important role to play in achieving a sustainable future. This research opportunity offered me a chance to examine the nexus of these two interests and explore the substance of this belief. My experience and motivation are reflected in the focus and shape of this research project.

1.2 My research focus

In this thesis I define Anthropocene art as creative endeavours that express, explore, reshape, query, or unsettle ideas of humanity as a geological force, and its associated implications. The category includes work documenting the vast scale of human-induced environmental destruction, events marking the extinction of species, enactments of alternative modes of living and actions that intervene in fossil-fuelled cultural institutions. Anthropocene art forms a subset of a broader category that is environmental art, along with land art, eco-art and climate change art. These terms are not strictly defined, and they often blur and overlap. It is suggested that the genre of environmental art emerged from a traditionally representative landscape art (Thornes, 2008). A move towards more performative interventions began to acknowledge an entanglement of nature and culture, or what Ballard and Linden (2019, p.143) refer to as “art in direct conversation with the planet”. I extend the definition of Anthropocene art, and locate it more clearly within the broader category of environmental art, in Chapter 3.

Though some commentators have lambasted the creative sectors for a dearth of art that engages with themes of the Anthropocene – in particular, climate change (Ghosh, 2016; Macfarlane, 2005; McKibben, 2005) – there is a steadily growing volume of artistic endeavours that tackle the tricky questions that lie at the heart of this newly ushered-in epoch. It is important to acknowledge that this growth has been explicitly encouraged and supported by creative programmes including Imagine 2020, Cape Farewell, and TippingPoint. Imagine 2020 – subsequently Imagine 2020 (2.0) and currently Art Climate Transition (ACT) – began as a network of eleven European arts organisations focused on raising awareness of socio-ecological issues, in particular climate change, amongst civil society audiences. The initiative, funded by Creative Europe, progressed

to adopt a focus on imagining possible sustainable futures, and most recently has emerged as ACT, now a network of 10 organisations committed to addressing issues of ecology and climate change, and associated themes of social justice.

Both Cape Farewell and TippingPoint concentrated on bringing artists together with climate scientists, brokering interdisciplinary relationships. Since 2003 Cape Farewell has convened expeditions to the Arctic, amongst other places, taking scientists and creative practitioners to the coalface of climate change, resulting in artistic outputs that are then exhibited around the world. Founded in 2005, TippingPoint focused on running multi-day conferences and events that gathered artists together with climate researchers, policymakers and practitioners. It also commissioned a range of artwork that addressed the issue of climate change. All three of these initiatives have been intimately involved with much of the Anthropocene art that has emerged over the past decade and more.

This growth of Anthropocene art has been welcomed by many across the cultural sector, and academic scholarship has pointed to the importance and potential of artistic engagement with themes of the Anthropocene. It is held by many to harbour the potential to (re)kindle an awareness of connection between human and nature and to promote environmental responsibility. Bostic and Howey (2018, p.107) for example assert that “art, performance and literature can connect people at an emotional, personal level to the urgency of the situation we face in the A/anthropocene.” Cartiere and Wingate (2019, p.131) speak of the “power of the arts to dramatically shift ways in which we see (and understand) the world around us”. Yet, such public assertions emanate predominantly from critics and arts professionals who represent only a portion of audiences that engage with art (Warren, 2012). Moreover, as Clark (2015) has pointed it out, these claims rest upon an assumption that a heightened awareness of connection, and of urgency, will lead to an ethic of care.

I am not attempting to undermine these assertions and assumptions, nor am I suggesting that they are misplaced. Indeed, my intention is to do quite the opposite. I am, however, proposing that to gather a fuller understanding of the potential that art has in the face of the Anthropocene, it is prudent to examine experiences of various audiences, beyond the critic, curator, scholar and artist. Audience experience is a pertinent but under-explored dimension of Anthropocene art scholarship and discourse. A richer, more textured picture of how, where and why audiences encounter such artwork, as well as insights into what meanings they draw and how these meanings remain with them (or not), may help to inform future theory, practice, and investment decisions. As I discuss further in Chapter 3, though some scholars draw on audience insights, these studies are few and far between. In addition, they invariably employ social science methodologies such as surveys that, whilst establishing a rigour that may lend itself to representative conclusions, may not be able to capture some of the nuance and complexity that resides

in the relationship between art and audience. I contend that it would be valuable to hear audiences, in their own words, describe their experiences with Anthropocene artworks, offering another layer of insight into this under-examined area.

Accordingly, my research poses the following two questions:

1. In what ways might experiences with interactive art aid understandings and navigation of the Anthropocene?
2. What can we learn about the impacts of Anthropocene art by listening to its audiences?

My decision to focus this inquiry on interactive art has been informed by the sensory dimensions of the Anthropocene. Scholars suggest that this current epoch is marked by a growing separation of humanity from our physical grounding in the environment (Otter, 2020; Demos, 2017). We might consider this distancing to be symptomatic of an anthropocentrism that is deeply rooted in western cultures, which “has helped us to lose touch with ourselves as creatures who are not only cultural beings but also natural beings, just as dependent on a healthy biosphere as other forms of life” (Plumwood, 2002, p.99). Much of modern human society operates under what Plumwood terms an ‘Illusion of Disembeddedness’, considering ourselves as separate to nonhuman nature, free from the ecological rules that govern the planet. Such an illusion, that removes human endeavour from the realities of physical, Earthly limits, enables an economic system that is predicated on unfettered growth. These simultaneous detachments – both sensory and ontological – go hand in hand.

However, the Anthropocene configuration serves to ground humanity firmly within a geological timeline, alongside other Earthly creatures. Geological time is a span so vast that the presence of the human is barely an instant. The scales presented and the epochal demarcations proffered highlight a precarity for our species – and others – as the stable conditions of the Holocene that we have taken for granted begin to waver. As such, Bjornerud (2018, p.158) suggests that the Anthropocene marks “the end of the illusion that we are outside nature”. Interactive art, which invites deliberate involvement from an audience and engages multiple senses, is in some way a physical manifestation of unpicking this detachment, recasting spectators as collaborators. Physical, deliberate interaction with an artwork or creative initiative draws attention to an embeddedness that the Anthropocene underscores. Chapter 2 and Chapter 3 address these themes in more detail.

The definition of interactive art that I employ here is broad. For this study, I take interactive art to encompass creative work that involves multi-sensory engagement and explicitly invites audience members to actively bring themselves into the work, taking on a participatory quality in at least one of the works I focus on. This breadth adds

texture to my inquiry and offers the opportunity to examine a range of ideas and approaches. Amongst this variety, an attempt to reveal and unravel this Illusion of Disembeddedness is the thread that runs through each of the works I examine in this research.

1.3 My approach

I chose to explore these questions through a series of three case studies: real-world examples of Anthropocene art. Selecting just three cases offered me the scope to explore the projects in depth, interacting not only with the audiences that encountered these works, but also with the artists, and with the artworks themselves. I was able to spend considerable amounts of time immersed in the details of each artistic endeavour. These three cases provided rich insight into three unique instances of Anthropocene art, each taking a distinct approach, embedded in different contexts. Though evaluative comparisons between the artworks was not the objective here, exploring the three cases first individually and subsequently alongside one another offered multiple ways to consider the research questions that this study posed. Though a case study approach does not lend itself to generalised conclusions, it instead promises rich, detailed insight and valuable texture that can add depth to a body of knowledge.

More specifically, I focused on contemporary works based in the United Kingdom, which allowed me to access the works, artists and audiences with relative ease. The *Coral Empathy Device* (Austen, 2017) is a wearable sculpture that offers an aural and haptic translation of what it is to be a coral. The *Deep Time Walk* (Deep Time Walk C.I.C, 2016) is a smartphone app that offers a dramatised narration of the 4.6 billion year history of the planet as the listener walks a distance of 4.6 kilometres, transposing time into distance. The *Time and Tide Bell* (Vergette, 2007) comprises a series of bronze sculptural bells that ring with the movement of the high tide, installed around the coast of the United Kingdom. Detailed descriptions of these artworks are offered in the respective chapters (Chapter 5, Chapter 6 and Chapter 7). As well as exploring audience experiences, I also interviewed each artist, and in the case of the *Deep Time Walk* and *Time and Tide Bell*, other centrally involved parties. I was particularly interested in the origins of and motivations behind the work and in exploring the extent to which they held preconceived ideas of what an audience might garner from their experience. Did these artist expectations match the realities of the experiences of participants in this research?

To explore these case studies, I adopted an intuitive inquiry approach. Intuitive inquiry, developed by Rosemarie Anderson in 1998, is a hermeneutic research method that

places an emphasis on the personal and cyclical nature of empirical endeavours, embracing the implication of the researcher in the research. This approach is particularly well suited to studies of human experience and promotes an ongoing dialogue with empirical materials as insights emerge, develop and become refined. Intuitive inquiry offered a flexible framework within which I was able to employ appropriate research tools. Interviews with audience participants were very loosely structured, inviting an open sharing of their experience with the work. This flexibility was deliberately chosen to honour the individuality of each experience and allow what was important for the participant to emerge through conversation. From these conversations, I was then able to draw out themes that pertain to the research questions I have posed.

1.4 My use of theory

Within this thesis I have approached theory as a lens through which I make sense of the world, or a set of tools used to consider and craft meaning. I found particular value in bringing collections of these tools together at various points in this research journey to shape, unpick, or extend lines of thinking. The tools themselves are honed and renewed through this process, as an idea from one theorist is then supplemented or transformed through the reading of others.

In both Chapter 2 and Chapter 3 I offer a review of key bodies of theory. Chapter 2 offers a theoretical grounding of the Anthropocene, offering a review of key arguments, schools of thought, and critiques. Chapter 3 explores theory at the juncture of art and the Anthropocene: scholarly works that examine the role of art in the face of Anthropocene challenges and, in some cases, explore the efficacy of this work. Here I would like to draw attention to several theorists who have marked significant turning points in my research journey. Each influenced a shift my thinking, opening up different ways of seeing the questions I was asking, the approach I was taking, or the empirical materials I had collected. Of course, this influencing did not occur in isolation: the turning points I refer to were a consolidation of many different readings, sightings, and conversations. Yet I offer these theorists as an indication of how this thesis has been shaped and informed by various theoretical sources.

Mike Hulme, Professor of Human Geography, has written extensively about the cultural dimensions of climate change. Hulme's work explores how climate change has shifted from what was predominantly a physical problem to becoming a simultaneously social phenomenon that reveals our deepest (and often discordant) values and cultural attitudes. His 2009 book, *Why We Disagree About Climate Change*, made clear that the

ways in which this phenomenon might be meaningful to us are multiple, varied, and often complex, which holds for the broader concept of the Anthropocene. This work sits behind my positioning of the Anthropocene as a juncture, as an idea that can be mobilised for a variety of tasks (Hulme, 2009). (See section 1.6 for more on the idea of juncture.)

In a later work, Hulme (2010) explores the implications of globalised knowledges for the understanding of and response to environmental change. He makes clear that global institutions like the Intergovernmental Panel on Climate Change (of which he was part from 1995 to 2001), with its epistemic community of global climate modelers, functions to collapse knowledge of climate change to a global consensus. This collapse risks losing important local texture and erases cultural differences. *How* we know, in its shaping of *what* we know, matters. It has a bearing on action, as action has a bearing on knowledge: geographical context and difference have an important impact on mobilising communities in the face of environmental challenges. This *how* of knowing has been central to my exploration of what art might offer us in the face of the Anthropocene, and more specifically, in emphasising the importance of place and community.

At various points throughout the thesis I draw upon theory from interdisciplinary scholar **Donna Haraway**: her work has peppered my research journey from start to finish. Firstly, her work on the Chthulucene troubles the concept of the Anthropocene, illuminating pitfalls and critiquing assumptions (Haraway, 2016). It makes clear that an adjusted trajectory must involve a reconceptualisation of how we exist in the world: to understand our reality as entangled, rather than separate. It is this reconceptualisation that sits at the centre of my enquiry: in what ways do these creative works contribute to a realisation of this adjusted trajectory? Secondly, Haraway influenced my very early methodological thinking with her notion of situated knowledges (Haraway, 1988). Research is never conducted from nowhere, it is grounded within a particular location, social dynamic, and experience, that resists impartiality. This work marked a significant point in my own approach to this research project, as I began to step away from previously held ideas of objectivity.

Finally, Haraway was again prominent in my thinking toward the final stages of my research, as I collected the findings and ideas together in a final conclusion. Her concept of ‘ongoingness’ aptly names what my exploration suggests these creative works may contribute with regards to our navigation of the Anthropocene. Defined by Haraway (2016, p.132) as “nurturing ... ways for living and dying well with each other in the tissues of the earth whose very habitability is threatened”, ongoingness involves rethinking our relationship with other beings and with the lands we inhabit and

encompasses a deep acknowledgment of our entanglement. It involves looking directly and unflinchingly at the state of things and making a commitment to ‘response-ability’ in the face of current sobering circumstance. This articulation helped to give shape to my assertions that emerge from this research.

In September 2019 an opinion piece in the New Yorker by writer **Jonathan Franzen** caused significant controversy. Due to what some suggested was a misrepresentation of the scientific consensus, ‘What If We Stopped Pretending?’ (Franzen, 2019) angered climate scientists and was broadly dismissed. Though I may not agree with this piece in its entirety, I discovered some nuance in Franzen’s message that coalesced with my research analysis at the time. Franzen points out that in times of heightened change there is a risk that people seek protection in armed force and tribalism. The best defence against such a response is, Franzen suggests, investment in functioning democracies, legal systems, and communities. This acknowledgement -- that the strengthening of community is increasingly important in the face of what will be an unsettled future -- began to give further shape to my thinking as I worked with empirical materials from the *Time and Tide Bell* fieldwork.

My approach to audience engagement and participant conversations was significantly informed by the work of audience research scholar, **Kirsty Sedgman**. I wished to encourage participants to go beyond evaluations of the artwork and wanted to avoid restricting their responses through pre-determined choices in a survey. Sedgman’s work addressing this methodological challenge encouraged me to craft an opening question that invited participants to express what the artwork meant to them in the moment and how that meaning might have changed or faded since. In a field that can appear dominated by precise surveys and questionnaires, Sedgman’s research gave legitimacy to a more open, discursive approach.

Some participant conversations indicated that before even arriving at themes of the Anthropocene, there were barriers to engagement with the work. It was Sedgman’s research that also assisted here, helping me to make sense of participant responses that expressed doubt in their own ability to ‘get’ art. Her scholarship offered theoretical support for the importance of cues and tools offered by and alongside artwork, underlining that “people do need to feel able to grasp how they are meant to be orienting themselves (physically, cognitively, emotionally) towards an experience in order to gain value” (Sedgman, 2017, p.316-317). Sedgman enabled me to articulate that the necessity of accessibility is pertinent to Anthropocene art, perhaps even more urgently than for the broader field.

My engagement with the final theorist I introduce here is a particularly good illustration of how it is through the lenses of other theories and experience that ideas appear more

or less relevant. Though I encountered the work of theatremaker and writer **Lucy Neal** in the early days of this research, it is only towards the end of the journey that I found particular resonance in it. When trying to name what it was that was emerging from my analysis of empirical materials gathered from fieldwork related to the *Time and Tide Bell*, Neal's 'transitional arts practice' struck a chord (Neal, 2015). Transitional arts practices bring people into a collective, maximising relationships for action in the context of global challenges, working in community to reimagine and remodel society. This concept became central to my discussion and articulation of the role that art may be able to play in the Anthropocene.

1.5 Outline of this thesis

This thesis has been structured to lay out the theoretical groundwork before detailing my methodological approach and then delving into the detail of the three case studies. Chapter 2 and Chapter 3 establish the conceptual foundation upon which I examine the three case studies that are then presented in Chapters 5, 6 and 7. Chapter 4 describes my perspective as a researcher and the methods employed in this study. Chapter 8 considers the cases together, before I conclude the thesis in Chapter 9.

Chapter 2 | Considering the Anthropocene introduces the concept of the Anthropocene in more detail, charting its journey from frustrated outburst to academic zeitgeist. I explore the implications of associated stratigraphic debates that extend beyond the field of geology, spilling into social, political and broader ecological spheres. I go on to discuss how the concept has resonated within different disciplinary fields and trace some of the tussles for knowledge ownership. I present the paradox of the Anthropocene, demonstrating how it is simultaneously a device of hubris and humility, and examine some of the narratives that propose different pathways through this new epoch. Following an appraisal of the sensory dimensions of the Anthropocene, I focus on its potential as a juncture for reflection and reconfiguration.

Chapter 3 | Anthropocene art and its literatures examines the current scholarship on Anthropocene art. I begin the chapter with a definition of Anthropocene art and locate it within the broader genre of environmental art, tracing its provenance. I illustrate the central points in the academic discussions of Anthropocene art, offering examples of creative practice alongside theoretical considerations. I demonstrate that whilst much has been claimed about the potential of Anthropocene art, little research has been conducted into the experiences of the audiences of this work. I discuss the few studies that have made a foray into this territory and outline how my study will add significant texture to this nascent body of knowledge.

Chapter 4 | Research methodology outlines the methodological approach I adopted in this study. Firstly, I detail my ontological and epistemological position as a researcher, and outline how a critical realist stance has informed my project design. I move on to introduce intuitive inquiry as the methodological approach I adopted and highlight the ways in which it was an appropriate choice for my research endeavour. I present an overview of an early pilot study featuring *Carbon Capture* (Gosling, 2017), before describing the three case studies I focus on and how I recruited and engaged with participants. Finally, I share my approach to analysis of the empirical materials I gathered and reflect on the reliability of my findings.

Chapter 5 | Interspecies encounters of the Anthropocene: a study of the *Coral Empathy Device* presents the first case study of this research project. I introduce Kat Austen's *Coral Empathy Device* (2017) and discuss its roots in Anthropocene concerns, as well as its focus on embodied, rather than codified, knowledge. I locate it amongst a constellation of other artworks before describing my own encounter with the *Coral Empathy Device*. I then move on to present insights from my conversations with participants, detailing the spectrum of different responses that were provoked by the work, the role of contextual information, how meaning emerges through dialogue and broader expectations of art. I finish by considering the legacy of the work amongst participants.

Chapter 6 | Journeying to the Anthropocene: a study of the *Deep Time Walk* presents the second of my case studies. I begin with a description of the *Deep Time Walk* (2016), outline its roots in Anthropocene thinking, discuss the physicality of walking, and how the experience is mediated through mobile technology. I then locate it amongst a collection of related artworks, before describing my first experience of the *Deep Time Walk*. The insights from participant conversations that I present include an exploration of the interplay between narrative, landscape and walker, a felt sense of scale, the role of attention, and the effect of being solitary. Again, I finish by considering the legacy of the work amongst participants.

Chapter 7 | Making place in the Anthropocene: a study of the *Time and Tide Bell* presents the final case study. I introduce Marcus Vergette's *Time and Tide Bell* (2007), tracing the development of the project from the crafting of the first bell to the present-day guise of the Time and Tide Bell Organisation. I explore the roots of the project in Anthropocene issues and discuss the dynamics of art established within a community. I locate the work within a broader set of related creative projects and share my experiences with the *Time and Tide Bell*. Insights from my conversations with individuals in the *Time and Tide Bell* communities include an examination of how community activators are central to this project, the multiple layers of the artwork, how it has been used to catalyse engagement, and the way in which the sculptures intervene

in the concept of place. I finish by considering how the bells function as gathering points.

Chapter 8 | A discussion across the cases takes a step back from the individual case studies and looks at what we might draw from approaching the three together, informed by theory considered in Chapter 3. I begin by discussing how all three case studies involve multiple ways of knowing, engaging the senses beyond the visual. I explore the varying pathways of meaning-making that audiences are offered through the artworks, and the extent to which they are offered signposts along the way. I consider how the cases focus on different sites of transformation, either the individual or a collective, and how the forms of these works reflect this focus. I move on to discuss the degrees to which these cases are embedded in everyday places, and the role this may play in aiding a navigation of the Anthropocene. I reflect upon the broader context in which these works sit and reflect on the extent to which these works acknowledge their own role in a broader process of future-building. I finish the chapter with a consideration of my findings amongst recent developments in the field of Anthropocene art.

Chapter 9 | Conclusion reflects on the study as a whole and brings it to a close. I start by returning to the research questions set out above before offering an overview of the thesis, summarising the key points covered in each of the eight preceding chapters. I move on to address each research question in turn. I outline what the study has presented in terms of the ways that experiences with interactive art might aid our understanding and navigation of the Anthropocene. This includes offering multiple ways of knowing the intricacies and urgencies of the Anthropocene, and acting as a gathering point around which we might craft alternative ways of living on the Earth and with other beings. I then examine what we can learn by listening to the audiences of Anthropocene art, pointing to insights into the meaning-making process, the importance of dialogue and the significant role of place in these experiences. I move on to delineate the contributions that this research makes to the body of knowledge regarding Anthropocene art, before discussing limitations of the study and implications for future research. I finish with a personal reflection on the journey I have been on.

The following eight chapters will take the reader on a journey through theory, criticism, methodology, empirical materials, analysis and discussion. As a whole, it offers insight into the value of art in our current geological times and considers how this may be supported and extended to aid our navigation of the unprecedented challenges of the Anthropocene.

1.6 Definitions

For clarity, here I outline some terms that may require definition for the reader. Most are extended at later points in this thesis.

Interactive art: As outlined above, I employ a broad definition of interactive art in this study. I draw on a description from Kluszczynski (2010, n.p.) who suggests that with regards to interactive art, an artist “does not make a final, completed piece of art, instead produces an area of activity for the receivers, whose interactive actions bring to life an artwork-event”. Audiences become participants, performers, or co-creators. Thus, my focus here is on work that involves multi-sensory engagement and explicitly invites its audience to actively bring itself into the work, which may take on a quality of participation or co-creation.

Anthropocene art: Though the volume of literature concerning Anthropocene art continues to grow, a clear, agreed definition is not yet forthcoming. For the purposes of this thesis I consider Anthropocene art to be creative work that reflects upon, interrogates or responds to the expansive set of concerns provoked by the notion of the human species as a geological force. Anthropocene art makes attempts to reveal a human embeddedness that the recent epochal configuration has started to uncover. I expand on this definition in Chapter 3.

Climate change: In all instances of its use, I employ this term to refer to anthropogenic global warming caused by rising greenhouse gas emissions and other human activities such as deforestation. I define this term here primarily to outline reasons I choose not to adopt the increasingly used neologisms of climate crisis or climate emergency. Whilst the language of crisis and emergency has gained traction,³ caution has also been urged. Smith (2019) expresses concern about the psychological impacts of a sustained state of emergency. The language of crisis implies a scenario that can be tackled and rectified swiftly, at odds with the much slower, ubiquitous phenomenon that we know climate change to be. Moreover, implications that it *should* be tackled swiftly risk ratifying more extreme technological responses such as geoengineering, or dangerous political reactions, including the suspension of democratic processes. Hulme (2019a) warns that declarations of emergency risk limiting our focus to only concerns of the climate, at the expense of the complex array of associated Anthropocene challenges. As I share the unease expressed by both Smith and Hulme, in this thesis I opt to use the term ‘climate change’.

³ Since the latter part of 2018, a growing number of institutions, cities, states, and nations, made declarations of a ‘climate emergency’. As of December 2020, almost one billion people, over 12% of the global population, live in an area that has adopted a Climate Emergency resolution (Hender and Sutton, 2020).

Juncture: I employ this term to refer a point in time made critical by a confluence of circumstances – in this case, the circumstances of the Anthropocene. A juncture is pregnant with latent potential and opportunity, a point from which multiple futures might materialise.

Navigate: Various conjugations of this term appear throughout the thesis. When used specifically in reference to the new epoch, I employ it as an acknowledgement that the Anthropocene is not a state of affairs that we can solve or retreat from. Rather, we must now make choices about how we engage with the world as it is, perhaps guided by ideas of what it might be. It is this element of choice that is crucial in my use of the term; an acknowledgement that we, as other earthly beings, have agency, despite its potential limitations.

Audience, visitor, participant: Throughout this thesis I refer to individuals that encounter Anthropocene art using various terms that I will delineate here. Firstly, ‘audience’ is the broadest term I employ, encompassing anyone who encounters an artwork including, but not limited to, those involved in my research. Secondly, I use ‘visitor’ in reference to those attending installations. It appears particularly in Chapter 4 concerning *Carbon Capture* (Gosling, 2017) and Chapter 5 with regards to the *Coral Empathy Device* (Austen, 2017). Finally, ‘participant’ is used in reference to any individual involved in my research, or the research of others. Of course, considering the definition of interactive art above, we might also consider these individuals to be participants in the artwork.

Personal archive:⁴ I employ this term to invoke the collection of existing knowledge and past experiences of an individual. We draw on this archive for meaning-making and it frames how we encounter the world.

A brief note on ‘we’: Throughout, I write from my situated position. References to ‘we’ suggest those of us in wealthy, industrialised nations, often termed the ‘western’ world. Yet this ‘we’ is also not fixed, but encompasses those reading this thesis, creators and audiences of Anthropocene art, scholars at the nexus of disciplines and all concerned with how we might navigate an uncertain future.

⁴ The way that I use this term here emerged from a conversation with fellow postgraduate researcher, Benjamin Skinner, to whom I am very grateful.

Chapter 2 Considering the Anthropocene

Over the last two decades the term ‘Anthropocene’ has crept slowly but surely into the academic lexicon and beyond, into popular culture. Though it names an epochal addition to the geological timeline, the resonance of the term points to its capacity as much more than a temporal unit. From stratigraphic category it has found its place as a cultural zeitgeist, harbouring multitudes of meaning, intriguing paradox and a variety of implications, many of which are introduced and explored in this chapter. It is a concept rich with potential and, I argue, presents us with important opportunities for reflection and reconfiguration.

This discussion is sectioned into five parts. Firstly, I outline the origins of the Anthropocene term within the field of Earth system science, its journey into the domain of stratigraphy, and present the main points of definitional disagreement alongside associated implications. Secondly, I explore the extensive resonance of this term both within the academy and beyond, engaging with the most common lines of discourse surrounding this concept. In doing so, I begin to trace the associated politics of knowledge production: claims of ownership; tussles over legitimacy; and parameters of engagement. Thirdly, I contemplate the paradox it presents with regards to human agency and examine different narratives that speak to this paradox. Fourth, I review sensory dimensions of the Anthropocene, and how it may configure us as spectators or ground us in the physicality of our surroundings. Finally, I consider the Anthropocene as a juncture, positioning it as an idea that can be mobilised for a variety of tasks (Hulme, 2009).

2.1 In the beginning: the origins of a concept

It has been reported that the term ‘Anthropocene’ was first coined by atmospheric chemist Paul Crutzen in the year 2000 at a meeting of Earth system scientists (Steffen, 2013). Frustrated with his colleagues’ continued use of ‘Holocene’ to refer to the epoch of the current day despite the growing changes being observed, Crutzen proposed the name ‘Anthropocene’ to “emphasize the central role of mankind [sic] in geology and ecology” (Crutzen and Stoermer, 2000, p.17). From what was initially an impromptu exclamation has emerged a term that has gained traction both within Crutzen’s own academic field and has since spilled over into far reaching corners of the academy and beyond. It marked the start of increasingly significant – and prominent – explorations

and debates about the influence the human species has, and will have, on planet Earth, and on the viability of our own survival.

The implications of Crutzen's proposal are extensive, reaching far beyond variations in nomenclature. The Holocene epoch, a 10,000 year period of relative climatic stability and resource availability, offered what has been referred to as a 'safe operating space' for humanity (Rockström et al., 2009, p.472). A departure from the Holocene implies upheaval amongst Earth systems that have remained stable throughout the evolution and flourishing of the human species. To employ the 'anthropo-' suffix elevates those implications to yet another level. An *Anthropocene* epoch connotes a geological age of the human, rendering the human as geological agent. Not merely indicating the presence of the human species, nor even the extent and proliferation of our species across the lands and seas of the Earth, but the assertion that this single species has the might and influence of a *geological force*, intended or otherwise.

Following the publication of two initial papers on the subject authored by Crutzen (2000, 2002), the term moved beyond neologism within the Earth system science community. It chimed with the weight of evidence pointing to human-induced alteration of the landscape, changes in the biosphere, and disruption of key nutrient systems, to such a degree that there were calls to consider the formalisation of the Anthropocene as a new epoch to officially supplant the Holocene. As such, an Anthropocene Working Group of the International Commission on Stratigraphy (ICS) was established in 2009 to examine the case and develop a proposal for consideration. The body of evidence considered by this group is vast and diverse, indicating that human resource use and patterns of consumption have carved deep, lasting impressions and left indelible traces across the planet.⁵

The Anthropocene Working Group is confident that sufficient evidence exists for the Anthropocene to be acknowledged as a new geological epoch. In 2017 the group published its conclusion that:

Anthropocene deposits are significant and geologically 'real', and in a number of respects novel, on the scale of Earth history. These changes mark

⁵ As illustration, I point to two particular publications: research by Cooper et al. (2018) into sedimentary flows has identified humanity as the dominant geomorphological force, effecting transformation of the Earth surface on a greater scale than any geological process, through activities such as construction and mineral extraction; Elhacham et al. (2020) suggest that the year 2020 marks the point at which anthropogenic mass will surpass all global living biomass.

the proposed Anthropocene as being sufficiently different from the Holocene to constitute a new unit of geological time (Zalasiewicz et al., 2017, p.59).

Though, before this new unit of geological time can be formalised, a stratigraphic marker of the epochal boundary must be identified and agreed. The significant political and philosophical implications associated with the choice of marker reach far beyond the boundaries of geology and have provoked heated deliberation amongst the research community.

2.2 Implications of stratigraphic debates

It may be argued that the formalisation of the Anthropocene is, in part, a quest for knowledge legitimacy. In the debate about the beginning of this new epoch, those on one side of the argument will receive acknowledgement and a place in the stratigraphic history books, whilst others will fade from memory. A range of academic and economic benefits rest on the decision that will be made by the International Commission on Stratigraphy (Lorimer, 2017) and thus it has become a particularly heated contest. Beyond the academy the stakes are even higher, at the level of humanity itself, as such decisions hold implications regarding the legacy and culpability of our species. Steffen et al. (2011) suggest that the concept of the Anthropocene could challenge human belief systems and ways of thinking in a similar fashion to that of Darwin's theory of evolution. Darwin's theory tore apart long-held ideas (particularly within Christianity) that humanity was special in a way that set it apart from other species, sparking outrage, rejection and disbelief from many. The concept of the Anthropocene, as it once again reorients how we conceive of the human within the environment, could evoke similar responses.

All of the proposed stratigraphic boundary markers carry with them different implications in terms of intent, blame, and agency, each of which is heavy with normative associations. Early Anthropocene hypotheses of Ruddiman (2003) imply that the biophysical impacts characteristic of the Anthropocene result from an innate human tendency marked by a long, gradual trend, rather than be tied to any specific political or social organisation. Lewis and Maslin's (2015) argument for the Orbis Spike⁶ implicate

⁶The Orbis Spike names a prominent dip in atmospheric levels of carbon dioxide as a consequence of the Columbian Exchange. The arrival of Europeans in the Americas in the late 15th century that involved previously unprecedented movement of plant and animal species, both deliberate and accidental, between the Old and New Worlds, also resulted in the near decimation of the indigenous human population of the Americas

colonisation and global trade, aligning the Anthropocene with the emergence of the modern world. Crutzen’s original proposal that pins the dawn of the epoch to the invention of the steam engine, and the choice of Steffen et al. (2011) – the year 1800 – place a spotlight on the Industrial Revolution as the first prominent exhibition of human society’s geological significance. In this configuration, the features of the Anthropocene become tied firmly to the structures of industrial capitalism and its associated technologies, as they enabled manipulation of the soils to maximise agricultural outputs, extraction of fossil fuels at accelerated rates, and the unprecedented swell of human populations.

Some scholars argue for a date that is later still, pointing instead to the Great Acceleration that followed the Second World War, in which “every indicator of human activity underwent a sharp increase in rate around 1950” (Steffen et al., 2011, p.849). This period saw atmospheric levels of carbon dioxide rise from 311 parts per million (ppm) in 1950 to 369 ppm at the turn of the millennium in 2000 (Steffen et al., 2011). Intensive use of fertiliser to increase crop yields began to disrupt the global cycles of nitrogen and phosphorus. A proposed stratigraphically significant marker coincides with these intense accelerations: the presence of radioactive elements from the first tests of an atomic bomb in July 1945 (Zalasiewicz et al., 2015). This is the stratigraphic boundary marker that the Anthropocene Working Group has put forward for approval. On 21st May 2019, the group voted in favour of the Anthropocene as a formal chronostratigraphic unit, with its base as “one of stratigraphic signals around the mid-twentieth century of the Common Era” (Anthropocene Working Group, 2019). This paints what could be interpreted as a hopeful picture: that it is only recent configurations of human society that have affected the biosphere to such an extent that threatens the safe operating space for our own species and other inhabitants of Earth.

The Anthropocene Working Group acknowledges that the Anthropocene concept holds significance far beyond the field of stratigraphy, or even geology, though it also stresses that its remit is restricted to evaluating the stratigraphic evidence available (Zalasiewicz, Waters, Summerhayes, et al., 2017). Nevertheless, at this point it appears tricky to unpick the scientific inquiry from normative understandings of humanity: there is no route to stratigraphic formalisation of the Anthropocene without associated social and philosophical connotations. Though the “exceedingly wide array of stratigraphic signals underpinning it demonstrates that it encompasses a *real and distinctive* time interval recognizable by its stratigraphic record” (Zalasiewicz, Waters, Wolfe, et al., 2017,

through disease, displacement and famine, which left large swathes of previously agricultural land to become reforested. The associated carbon sequestration was on a scale observable in atmospheric CO₂ in ice core records.

p.220, emphasis added), this does not neutralise any political or philosophical ramifications.

As Lorimer (2017, p.120) suggests, knowledge practices of stratigraphy are being stretched “to answer what is a fundamentally novel political and speculative question”. The Anthropocene Working Group claims that formalisation would avoid imprecise use of the term by other disciplinary communities and thus restrict the extent to which it becomes politicised (Zalasiewicz, Waters, Wolfe, et al., 2017). Yet what is ‘precise’ regarding an idea that has become as resonant as the Anthropocene? Considering that any decision about formalisation carries societal implications, intended or otherwise, it may be pertinent to extend such a decision to a far greater circle of influence. Questions of knowledge ownership are being evoked here, which I will address in the following section of the discussion.

2.3 Whose Anthropocene? Questions of ownership

As I have demonstrated, whose ideas will come to shape the concept of the Anthropocene has been subject of debate. These debates have extended further, into dimensions of ownership and even use of the concept. In particular, Hamilton (2016) claims that the term is distorted when employed by disciplines outside of Earth system science. To consider the Anthropocene through the lens of landscape ecology or archaeology, he suggests, is limiting and diminishes the concept. Only Earth system science has a sufficient grasp of the *systemic* nature of the Anthropocene. The stress that he places on the idea of system is an important one; the Anthropocene concept brings the connected nature of planetary life into sharp relief. Nonetheless, Hamilton himself introduces what I consider to be unhelpful limitations regarding how the concept may be engaged with outside of a particular ‘system’ science. We have to be able to think ideas in different ways. The point is the *systemic* quality of the concept, not the discipline within which it is considered.

Despite Hamilton’s arguments, there have been appeals to open the concept out beyond disciplinary boundaries. Ruddiman (2018) has called for a ‘flexible anthropocene’ deliberately employing a small case ‘a’ to stress its informal nature. Formalisation, he suggests, would impose restrictions on a term that by its nature should necessarily demand broad and varied engagement. Similarly, Maslin and Lewis (2015) argue that ‘multiple definitions’ of the new epoch should exist, including a historians’ Anthropocene, a political scientists’ Anthropocene and a philosophers’ Anthropocene, enabling a broad range of engagement tethered together by a central idea.

It is here that I would like to join Lorimer (2017) in suggesting that we can understand the concept of the Anthropocene as a boundary object. Though Lorimer mentions it only fleetingly, I consider it to be a particularly important idea. A boundary object, as defined by Star and Griesemer (1989), is a uniting concept that can be interpreted in different ways, allowing diverse groups to work together in the absence of consensus. Here, ‘boundary’ is used in the sense of shared space. Following this, a flexible Anthropocene, which allows for multiple interpretations by different communities, may operate as a boundary object, enabling constructive interaction rather than tussles over ownership. However, for a boundary object to function as such, there must be a willingness to allow other fields to engage with the concept. I will return to the idea of Anthropocene as a boundary object in the final section of this chapter, following discussion of the various interpretations of the concept that have emerged from the social sciences and humanities.

As an academic term, the Anthropocene could be considered esoteric, with little relevance beyond the limited boundaries of particular scholarly communities. Yet the idea that sits at its foundation – that humanity has become an increasingly dominant force on the Earth – is one that may be broadly recognised across society. I argue that it remains esoteric only if there is an intention for it to be so, and agree with Lorimer (2017, p.121) that it may serve as “a plastic and catchy label for a common curiosity and anxiety about the state and future of the Earth”. It has become, as suggested by Davis and Turpin (2015), a ‘charismatic mega-concept’. As such, Santana (2018) suggests it plays into the politics of knowledge by influencing research funding decisions, adding another political layer to the moral urgency it conveys.

2.4 Multitudes of the Anthropocene: beyond stratigraphy

The concept of the Anthropocene has resonated far beyond its roots in stratigraphy and Earth system science. The term has become fashionable within a variety of academic circles including economics, literature, philosophy, law, and geography. Currently, it is the (explicit) focus of at least three academic journals: *Anthropocene*; *Anthropocene Review*; and *Elementa: Science of the Anthropocene*. Publications about the Anthropocene have followed an exponential trend (Chin et al., 2016), and conferences featuring the Anthropocene have been numerous, to the extent that Davies (2016) proposes that it may have gone beyond fashion, and is now considered passé in some circles. Though we could suggest that the Anthropocene is evolving here as any other academic term de rigueur, I think something interesting sits behind the resonance that this concept has found throughout the academy.

Whilst other subject-specific epithets travel less fluidly across disciplines, and some terms have been endlessly divisive (I am thinking specifically of ‘sustainable development’), the Anthropocene offers a common focus. Its existential implications have universal pertinence and are ripe for multiple points of engagement. Even the suggestion of terms such as a ‘safe operating space’ are, claims Castree (2015, p.312), “an incitement to ask deep questions that admit of plural answers rather than clever solutions – questions such as ‘how should we live?’ and ‘what is it to be human?’” These are vital questions that hold relevance for a breadth of disciplinary inquiry. Though the concept may not operate to unite these inquiries in agreement or resolution, it may instead connect, to some degree, these inquiries to a shared conceptual space.

The Anthropocene functions as a linchpin to connect an array of human/nature concerns. It has reinvigorated existing debates about the ways in which we live, further probing “the social, ecological and now planetary implications of key concepts like development, capitalism, modernity and humanism” (Lorimer, 2017, p.123). Broader literature and scholarship which challenges anthropocentric conceptualisations of reality forms part of a more extended field within which the Anthropocene is relevant. This includes areas of posthumanism, object-oriented ontology, and new materialism. This thesis will not explore these aforementioned ideas in depth, though the following discussion will introduce and examine various ways in which the Anthropocene has been interpreted.

Both Castree (2015) and Lorimer (2017) offer a review of the epistemic communities that constitute the academic ‘scene’ established around this recently formulated term: the Anthro(s)cene and Anthro-scene, respectively. Lorimer (2017) identifies five ways in which the idea has been conceptualised, some of which I draw on in the discussion that follows: scientific question, intellectual zeitgeist, ideological provocation, new ontologies, and science fiction. Castree (2015, p.301) writes more specifically with reference to the field of geography, using ‘Anthropocene’ (note the additional ‘s’) in reference to the institutions, networks and publications engaged in comprehending and responding to the post-Holocene Earth. He suggests that “an idea like the Anthropocene invites geographers to ask deep questions about their *modus operandi*, such is its semantic reach and significance (cognitively, morally and aesthetically)” (Castree, 2015, p.302). I propose that this assertion may be extended beyond the boundaries of geography, to a far broader swathe of the academy, provoking a refocusing of epistemic ends and means.

The vibrancy and variety of these ‘scenes’ is instrumental to ensuring the productivity of the term. As the concept winds through various fields of study, adopted and adapted as it does so, it opens up opportunities for new epistemic practices that cross traditional disciplinary boundaries. Journals and conferences gather together geologists, artists,

social scientists, and philosophers. Haus der Kulturen de Welt in Berlin established an Anthropocene programme in 2013 to specifically convene “renowned thinkers, artists, filmmakers, and academics from the natural sciences and the humanities” to explore and negotiate this complex notion (Haus der Kulturen der Welt, 2013). In this way, the concept is operating as a boundary object or, what Brondizio et al. (2015, p.321) refer to as a bridging concept, “offering an open and flexible conceptual frame” that enables exploration from a breadth of perspectives. It is this pluralism that Lorimer (2017, p.133) suggests ensures “the democratic vitality of the Anthro-scene ... even in the face of a common (yet differentiated) planetary crisis”. The variety of interpretations is necessary, and it is important to resist an urge to impose a restrictive singular notion onto this multiplicity.

The Anthropocene has been a fruitful subject of academic wordplay, invoking an array of ‘-cenes’ as variations on the original. Critics of the anthro- prefix suggest that it implicates humanity as fundamentally problematic, when in fact it is very recent (predominantly western) ways of living that are at the root of the associated geological-scale impacts. The anthropos that is leaving its geological mark is not the totalising collective that the term implies. Moreover, to suggest that impact on a geological scale is the inevitable result of a fundamental, and universal, human nature rules out any form of agency in response to our current situation. Instead, to place emphasis on the structures that have underpinned unfettered use of resources and ecologically harmful practices, scholars including Haraway (2015) and Moore (2017) propose an alternative term: ‘Capitalocene’. Davis and Turpin (2015, p.7) underline this with a lyrical proposition, that “if the Anthropocene calls us to imagine humanity written into the rock of the Earth itself, capitalism is the instrument of this brutal inscription.”

Haraway (2015) reconfigures this again, suggesting that Plantationocene would more accurately tie our current geological times to themes of colonisation, slavery, and monoculture. Bonneuil and Fressoz (2016) offer further terms still: the Thermocene, naming the rising levels of greenhouse gases in the atmosphere; the Thanatocene, capturing the effects of war; the Phagocene, alluding to our habits of consumption; and the Agnotocene, as we close our ears and eyes to the evidence. In a recent publication, Mentz (2019) lists no fewer than twenty-four of these ‘-cenes’. At this point, we may begin to wonder if this has become merely a lexical form through which to present a preferred characterisation of our times. Yet it is important not to dismiss this, and the original Anthropocene configuration, so swiftly: Horn and Bergthaller (2020 p.7) propose that these alternatives “(mis)understand the concept as one which names a culprit”. A singular focus on blame and culpability overlooks the opportunities that the concept presents.

2.5 The paradox of the Anthropocene

The suddenness of the planetary changes that demarcate the Anthropocene have led Hamilton (2016) to characterise the Anthropocene as ‘rupture’. More specifically, he suggests that the term encapsulates a breach in the evolution of the Earth system, affected by human influence. Hamilton stresses the importance of this notion of rupture and its centrality to the monumental nature of this epochal shift. The Anthropocene is not, as he claims some other disciplines mistakenly imply, a continuation of previously existing anthropogenic impacts on the environment. This emphasis on the Anthropocene as ‘rupture’ is seemingly intended to emphasise the gravity of the situation, though it could function to back us into one of two corners, defined either by defeatism or by hubris.

Setting the Anthropocene as fundamentally distinct functions to underscore a problematic separation of the human from nature. As rupture, the Anthropocene sits apart from its stratigraphic comrades. It alludes to a deviation from an intended ‘natural’ course of things, to a change in the nature of the system itself. Seen this way, humanity – the anthropos of the Anthropocene – is set apart, positioned as a force that interrupts the otherwise harmonious trajectory of the ‘natural’ Earth. That we are an epoch-making species is a hubristic claim. As Santana (2018, p.19) points out:

We’re hardly the first set of organisms to be globally significant geological agents on such a massive level, but many of our fellow living geological forces haven’t merited their own epoch.

Characterising the Anthropocene as rupture limits labels of noteworthy geological agency to our own species, unique amongst other organisms. It is this very assumption of uniqueness – of being set apart from nature – that philosophers argue has led to the predicaments of the Anthropocene (Plumwood, 2002).

On the other hand, Davies (2016) stresses that the Anthropocene is, ironically perhaps, not an anthropocentric concept at all. Though he acknowledges that the human species exerts a “novel and distinctive level of sway” (Davies, 2016, p.7) on the physical world, this does not, he asserts, imply the absence of agency of other species, or even systems. In fact, the naming of the epoch moves us from the status of ‘Master species’, to join the ranks in deep time, bringing our earthly, perhaps fleeting, nature into sharp focus. It functions to challenge what Bjornerud (2018, p.7) refers to as our ‘time denial’, a reluctance to acknowledge the long history of the planet before our appearance, that is “rooted in a very human combination of vanity and existential dread”. To re-examine human-scale time through a geological lens may be an important step in addressing the human/nature dualism.

Yet to do so presents a significant challenge. The scales of deep time are not readily comprehensible to minds most familiar with the span of days, weeks and years (Gee, 2000). Yet the Anthropocene debate involves a “constant conceptual traffic between Earth history and world history” (Chakrabarty, 2018, p.6), demanding attention at vastly different scales. In terms of the Anthropocene, humanity is at once a dominant geological force, and the blink of a geological eye, simultaneously insignificant and ultimately culpable for swathes of environmental destruction. This paradox that configures the Anthropocene as both hubristic and humbling is accompanied by a tension: though the Anthropocene is defined by human activity and impacts, its consequences are entirely out of human control (Head, 2016). At once, we are both agents of the disruption and victims of its fallout. Latour (2011, p.9) outlines the way in which this draws attention to the ultimately entangled reality of the human/nature relationship:

With this enigma of the Anthropocene there is some sort of Moebius strip at work here, as if we were simultaneously what encompasses her [Gaia] — since we are able to threaten Her— while She is encompassing us —since we have nowhere else to go.

As a geological force we have intervened in planetary systems, imperilling our only home. Accordingly, the Anthropocene emphasises the reality of our fundamental entanglement with our environment.

2.6 Possible narratives of the Anthropocene

This tension between hubris and humility calls forth conflicting narratives for the course of the Anthropocene: one characterised by human progress and success, the other by human demise. Stories situate us in the world, offering fundamental meaning and direction. How we choose to characterise the Anthropocene – the narrative pathway that is employed – is material in shaping how we understand our past, how we imagine our future, and the action we chose to employ in the present. At this point of inflection, our previous narrative has ceased to function, and we must craft a new one in its place. A multiplicity of “debatable and polemical narratives rather than a single hegemonic narrative that is supposedly apolitical” (Bonneuil and Fressoz, 2016, p.289) offers conceptual tools to assist this crafting. The narratives of a ‘good’ Anthropocene and of the Anthropocene as crisis demonstrate the extremities of this potential.

Champions of a ‘good’ Anthropocene employ a narrative that emphasises a thriving future for humanity. Such optimistic stories minimise the disruption and destruction that is often implied in other accounts of the Anthropocene to come. Of course, the possible narratives of a ‘good’ Anthropocene are many and diverse. *An Ecomodernist Manifesto*

(2015), authored by a group of self-described ecomodernists, outlines a proposed pathway to ensure the Anthropocene is characterised by the continued ‘progress’ of humanity. Not only do the eighteen scholars suggest the possibility of a ‘good’ Anthropocene, they also propose that human knowledge and technology may even achieve a ‘great’ Anthropocene.

Critique of *An Ecomodernist Manifesto* has centred on its unequivocal embrace of current economic structures and its failure to interrogate the assumptions of a system based on infinite growth. The manifesto is based on assumptions, according to Caradonna et al. (2015, p.16), which “violate everything we know about ecosystems, energy, pollution, and natural resources”. The authors are accused of being highly selective in their portrayal of economic progress, prone to exaggeration of benefits and exclusion of more problematic social and political dimensions. To the exposition of these problematic practicalities we can add arguments of a more idealistic nature: the conceptual abstraction of humanity from its environment that underpins environmental destruction.

Unwavering in its anthropocentrism, *An Ecomodernist Manifesto* puts humanity at the helm. From this standpoint, a ‘good’ Anthropocene “demands that humans use their growing social, economic, and technological powers to make life better for people, stabilize the climate, and protect the natural world” (Asafu-Adjaye et al., 2015, p.6). Evoking tropes of stewardship from the teachings of various religions, this manifesto suggests that the human species can play the role of both hero and villain, setting it apart entirely from the remaining cast of planetary characters. Though the authors accept the necessity of reduced human impact on the environment, they reject the idea that humanity must re-evaluate its relationship with nature. They refer to a ‘sparing’ of nature – it is a victim which requires a protector – and assert that whilst “current and future generations *could* survive and prosper materially on a planet with much less biodiversity and wild nature ... this is not a world we want” (Asafu-Adjaye et al., 2015, p.25, emphasis added). This particular ‘good’ Anthropocene appreciates nature for its pleasing aesthetics.

Though similarly focused on such an aesthetic, Buck’s (2015) proposal for a good – even beautiful – Anthropocene emphasises connection with the nonhuman rather than stewardship. Her articulation of a hopeful vision, that she argues is necessary to stimulate political and cultural change, centres on the idea of ‘enchantment’: a state of wonder that illuminates the extraordinary in the everyday. Enchantment, enabled by participatory infrastructure, carves out spaces of inspiration in a “data-driven future of surveillance, disciplinary architecture, and algorithmic decision making” (Buck, 2015, p.376). Distributed agency and individual intervention are central to this retelling of the Anthropocene that presents rewilding, agroecology and biophilic urban design as

central, though decentralised, practices of the future. In doing so, Buck invites us to imagine a different sort of human that shapes a more cooperative and constructive relationship with nature. Where Asafu-Adjaye et al. (2015) suggest we forge ahead with the human project of progress, Buck recommends a pause and reflection as to whether this is the right project to pursue.

At the other extreme, narratives characterise the Anthropocene as a time of crisis, perilous for both human and nonhuman life. The epochal threshold becomes a dramatic tipping point that threatens disaster. This is a narrative that has proved popular with the media, evident in dramatic, attention-grabbing headlines. One stand-out example is the headline “Final call to save the world from ‘climate catastrophe’” (McGrath, 2018) following the publication of the special report on the impacts of global warming of 1.5°C above pre-industrial levels by the Intergovernmental Panel on Climate Change (IPCC SR1.5) in October 2018. This article from the BBC, alongside many others, made much of the idea that there are just ‘twelve years to save the planet,’ a sound-bite prediction that has been drawn on continuously since, though it fails to capture some of the nuance that lies within the 630 pages of the IPCC SR1.5 report.

The severity of this crisis peaks with narratives of extinction: both nonhuman and human. Research suggests that vertebrate species are disappearing at a rate that is 100 times higher than the background extinction rate,⁷ indicating a sixth mass extinction (Ceballos et al., 2015). Accordingly, McBrien (2016) suggests that the term ‘Necrocene’ – ‘New Death’ – may be more fitting for the current epoch, naming a time of death and dying. Narratives of imminent human extinction have entered the public sphere, perhaps most visibly with the emergence and expansion of the environmental activist movement, Extinction Rebellion. This moniker refers not only to the aforementioned sixth mass extinction event, but suggests that humanity itself is “in a life or death situation of our own making” (Extinction Rebellion, 2019). Scranton (2015, p.27), who suggests “the odds of our species surviving are slim,” insists that an acceptance of this crisis, and the death of our previous ways of living and understanding the world, is the only option now available to us.

Whilst there may be an ever-growing body of research which points to the very real risks posed by anthropogenic impacts on the climate and biodiversity, concerns have been raised regarding this growing ‘extinctionism’ discourse. Hulme (2019b) suggests that this rhetoric of climate change and extinction has emerged from mistaken interpretations of the IPCC SR1.5, presenting a certainty of extinction that is not indicated by the available scientific evidence. In fact, he explains, the evidence suggests

⁷ The background extinction rate is the rate at which extinction occurred before human activity became a contributing factor.

a range of futures to which probabilities are attached, arguing that the current extinction narrative is based on a flawed understanding. Moreover, claims Hulme, this way of talking is counterproductive in several ways. Not only is it problematic scientifically, but also psychologically, politically and morally. Psychologically, this rhetoric can lead too easily to feelings of terror, despair, and helplessness, undermining important mitigation and adaptive action. It does little for us politically, potentially leading to nihilism, and an evasion of responsibility. Morally, Hulme (2019b, n.p., emphasis in original) suggests that even if claims of impending extinction are received literally, “the mere *fact* of human extinction by no means impels us to conclude that the correct moral response must be to prevent that extinction.” This rhetoric is not in itself a useful tool to address the threat it implies and the associated moral complexity.

In his characterisation of the Anthropocene as rupture, Hamilton (2016) insists that it involves a permanent paradigm shift. The observed changes in the planetary system have passed a point of no return, or at least no possibility of return within a millennial timeframe. Hamilton (2016, p.100) is not ambiguous in his conclusion:

In short, the Earth System is now operating in a different mode and nothing humans can do now, even ending the burning of fossil fuels in short order, can turn the geological clock back to the Holocene.

The suggestion that there is little to be done in the face of climate change is a contentious one, forming one category of what Lamb et al. (2020) have termed the ‘discourses of delay’. This ‘doomism’ holds that mitigation is futile and promotes a surrender to climate change, a suggestion to which there is significant resistance. However, acknowledging an inevitable change in the dynamics of the planetary system does not necessarily imply a void of agency and activity. Franzen (2019) points to an alternative: rather than consider this realisation of inevitability as a defeat, it opens up a different path of necessary action which becomes increasingly meaningful. He highlights the strengthening of communities, the shoring up of democracy and the fight for equality as important in the face of what will be an unsettled future.

2.7 Sensory dimensions of the Anthropocene

The Anthropocene is not a singular object that can be seen all at once. It extends through time and space, through various ideas and narratives. Yet to grasp the notion of the Anthropocene, we tend to reach for the visual. Various technologies have facilitated such a visualisation, and the Anthropocene has become characterised by visual artefacts including the steep upward slopes of the graphs marking the Great Acceleration (Figure 2.1). In visualising the Anthropocene, we have moved beyond photography, to remote

sensing technology, which operates at much broader, global scales. It is mediation through this increasingly sophisticated technology that Kalaidjian (2017, p.20) suggests “gives the contemporary age the status of a global spectacle”. The reality of the Anthropocene is reduced to a series of images, a manageable visualisation of which we are no more than spectators.

Socio-economic trends

Earth system trends

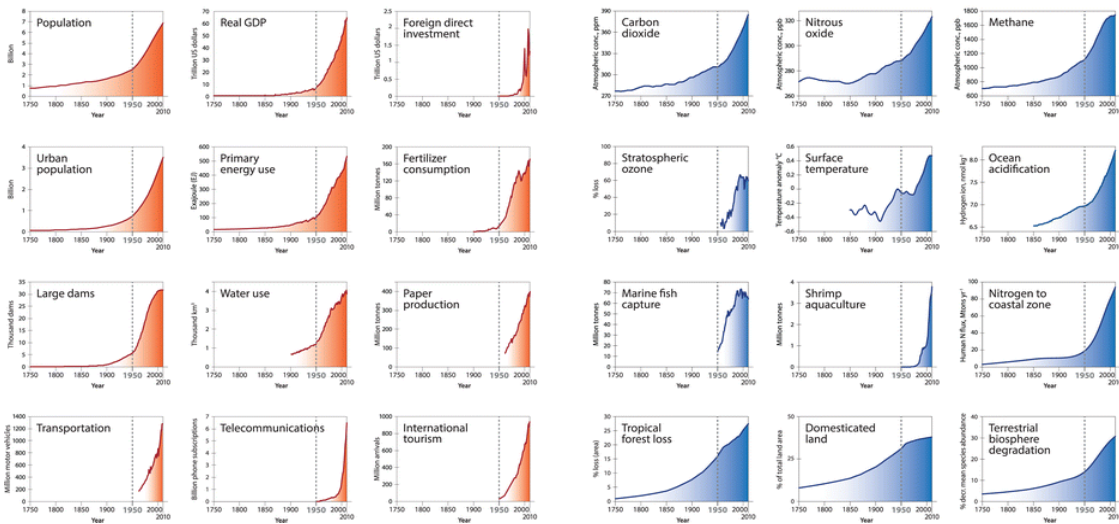


Figure 2.1: Trends from 1750 to 2010 in globally aggregated indicators for socio-economic development, and in indicators for the structure and functioning of the Earth system. Dotted line at 1950 (Steffen et al., 2015).

Demos (2017) encourages an interrogation of the ways in which the rhetoric of the Anthropocene enters into visibility, and its subsequent politics of representation. Though images constructed using satellite data may appear photographic, they in fact comprise of large volumes of information, much of which is beyond human perception. Far from presenting an unadulterated, objective reflection of the world, Demos (2017, p.18) cautions that data visualisation tools are:

Embedded in a specific political and economic framework, comprising a visual system delivered and constituted by the post-Cold War and largely Western-based military-state-corporate apparatus.

What these Anthropocene visualisations offer are highly curated images, which establish a tailored narrative. Our reality is shaped by these constructed representations and the technologies involved in that construction. Demos (2017, p.19) then proceeds to argue that:

Anthropocene rhetoric - joining images and texts - frequently acts as a mechanism of universalization, albeit complexly mediated and distributed among various agents, which enables the military-state-corporate apparatus to disavow responsibility for the differentiated impacts of climate change,

effectively obscuring the accountability behind the mounting eco-catastrophe and inadvertently marking us all complicit in its destructive project.

The narrative woven through these images enacts a dispersal of responsibility and a spectacle which Demos suggests distracts from the socio-political reality. He traces this universalising logic back to one of the most reproduced images in contemporary visual culture – the ‘Blue Marble’ – which offered a global visual, a picture of the whole Earth, which was anticipated to stimulate a global union of humanity (Figure 2.2).



Figure 2.2: *The Blue Marble*, 1972. © NASA

As spectacle, Kalaidjian (2017, p.20) suggests that the Anthropocene marks a time of absurdity: humans have never had such a direct and significant impact on the environment, yet never have we interacted with the world “in such an indirect and mediated fashion”. The spectacle, positioning us as distanced spectators, cultivates apathy. A withdrawal from engagement with the real is accompanied by an immersion in the virtual, enabled and driven through our monitoring technologies and associated imaging. Images play “more than an illustrative role” as they “tend to grant viewers a sense of control over the represented object of their gaze, even if that control is far from reality” (Demos, 2017, p.28). This was particularly evident in the case of the 2010 BP Deepwater Horizon oil spill, in which BP’s own ‘spillcam’ (Figure 2.3) underscored the “unbearable impotence of viewers who found themselves ... glued to their screens, mastering the image of the horrendous leak but not being able to stop the flow” (Demos, 2017, p.33). Spectacle reinforces an unquestioned limitation of agency.



Figure 2.3: Still image from BP ‘spillcam’ on TIME website, 2010. Accompanied by text that reads ‘Bored at work? Use your computer to watch environmental destruction as it happens’ © TIME

As this examination of the Anthropocene as spectacle begins to illustrate, it is an epoch characterised by a sensory hierarchy, predominant across Western societies, in which vision is paramount. Though Davis and Turpin (2015, p.3) suggest that the Anthropocene is “primarily a sensorial phenomenon: the experience of living in an increasingly diminished and toxic world”, our understanding of it has been dominated by the visual. Beyond the visual, it is argued that the ‘progress’ of western societies has been accompanied by a growing dissociation from the sensory or phenomenological aspects of being in the world.

Otter (2020) points to the correlation of the Anthropocene with a process of sensory distancing: a repulsion to excrement and a focus on sanitation marked a perceptual transition that tracked alongside the Industrial Revolution. A reconfiguration of comfort promoted a normative desire for residence within sealed, sanitised spaces with extreme atmospheric control (Otter, 2020). These desires are underpinned by the burning of fossil fuels and the flushing of clean water supplies. Thus, the Anthropocene, suggests Otter, is a time in which “extreme atmospheric order and entropic atmospheric disorder are interwoven and interlinked.” Accordingly, alongside sensory distancing, the body has become secondary to the mind, holding a diminished role in our navigation of the world.

Many attempts to detect or perceive the Anthropocene overlook the embedded nature of the body and lived experience in favour of globalised indicators and representations. This dynamic is particularly evident in the workings of institutions like the IPCC which, Hulme (2010, p.560) suggests, “neglects the many other possible regional or local signatures of a changing climate that are of far greater importance for mobilising and constraining society and resources”. The marginalisation of place-based, embedded

knowledges carries implications for how we begin to *live* with a changing climate, not just how we might model it. Our lived experience is situated, geographically, culturally, and historically, rather than abstracted and ephemeral.

It is argued that even the field of geology itself – the ‘birthplace’ of the Anthropocene – does not account for experiential dimensions of geological fieldwork. Raab and Frodeman (2002) present geological inquiry as embodied, requiring creative imagination, intuition, and perceptual judgement. Though it may not be a conscious process, “every perceptual act is necessarily an interpretive act” (Raab and Frodeman, 2002, p.70). This statement flies in the face of the traditional characterisation of an objective science. If “rather than precise and certain answers, geology offers probabilistic, inescapably historical, and deeply hermeneutic insights into the scientific dimensions of our self-understanding” (Raab and Frodeman, 2002, p.70), the role of the Anthropocene Working Group becomes considerably more significant. The formalisation process becomes consequentially entwined with the lived, sensory experience of the group membership.

Moreover, the vast timescales introduced by the geological character of the Anthropocene present a challenge to our temporal understanding, which is rooted in the phenomenological dimensions of a human life. In making sense of geological time, “one has to rely on analogies to *one’s own everyday experience*” (Raab and Frodeman, 2002, p.71, emphasis added). It can only be conceptualised *in relation to* our sense of time shaped by the rhythms of day to day, through analogies that compare the age of the Earth to a 24-hour day, or a 365-day year. Though Raab and Frodeman (2002, p.77) claim that “grasping enormous geologic time-spans becomes possible when we lengthen our mental gait to match the nature of the material,” I am unconvinced that intellectual comprehension of analogy is akin to a visceral grasp of time. To know an abstraction of something is not to know the *essence* of it, to understand it “in the tissues of our flesh” (Haraway and Kenney, 2015, p.256). Thus, the nature of the Anthropocene defies our privileging of sight and visuality, and grounds us firmly amongst our physical world. My choice to focus this study on interactive art – work that involves engagement with the senses beyond the visual – has been informed by the sensory dimensions of the Anthropocene outlined here.

2.8 Anthropocene as juncture

The recent emergence of the Anthropocene rhetoric could be assumed to indicate a newly adopted environmental awareness; a sudden sensibility to the destructive force of humanity. However, though the term may offer a distinct conceptualisation, the

acknowledgement of, and resistance to, environmentally destructive human progress is not a contemporary phenomenon. Bonneuil and Fressoz (2016, p.170) caution that the Anthropocene suggests a “narrative of ecological awakening, according to which our generation is the first to recognize environmental disturbance and question industrial modernity” which overlooks the cognisance present within previous societies and “depoliticizes the long history of the Anthropocene”. This implication – that only with the proposal of the Anthropocene as a geological epoch did awareness of environmental entanglement emerge – is essentially another form of exceptionalism, though generational rather than anthropocentric. Long before this geological terminology was adopted, there existed discourse critical of the dominant western mode of interaction with the environment, evident in nineteenth century Romanticism, through preservationism and conservationism of the early twentieth century, and activism that characterised the latter half of the century, including the establishment of Earth Day in 1970.

Nonetheless, it is prudent to examine what the term contributes to the discourse of human/nature relations and environmental destruction, and the extent to which the defining and formalising of a geological epoch may have agency. As previously discussed, the point chosen to mark the end of the Holocene and the beginning of the Anthropocene has significant implications, that Lewis and Maslin (2015) suggest may change the narrative of humanity in the environment. Defining an early starting point, such as that proposed by Ruddiman (2003), may normalise global environmental change and the associated role of humanity. In a similar way, a definition of the Anthropocene that overlooks the politics of colonisation and capitalism paves the way for a particular shape of response to environmental challenges; one marked by technological innovation, rather than the examination of deep-seated values and assumptions. In this sense, the Anthropocene has agency: the details of the definition matter.

Moreover, to declare the birth of the Anthropocene is to signal the death of the Holocene. Davies (2016, p.5) suggests that “with its demise, the civilized rights and pleasures previously confined to the Holocene will have to negotiate radically changed ecological conditions if they are to endure.” Here Davies seemingly imbues the geological categorisation with significant power: to claim that we exist within the Anthropocene is to transform our reality, recasting what we know of our recent history and placing constraints on our future. Yet these geological units of time, and the boundary marker proposed by the Anthropocene Working Group, are conceptual constructs and approximations. They are not, maintain Bonneuil and Fressoz (2016), hallmarks of a sudden transition from modernist overconsumption to an age of frugality and prudence. Bonneuil and Fressoz (2016, p.287) go on to underscore their argument:

Two centuries of scientific warnings and continuous challenges ... suggest that the attribution of a name to a new geological era is not sufficient to deflect a trajectory of two centuries of assaults to planet Earth.

They unequivocally reject that the term alone amounts to a transformed relationship between humanity and nature.

However, it may be the case that the Anthropocene introduces a conceptualisation necessary to *initiate* a transformed relationship between humanity and nature. Bonneuil and Fressoz are careful not to dismiss the *potential* of the term, and they acknowledge the way in which the idea illuminates the break between nature and culture. Though not sufficient, the concept of the Anthropocene may prove to be conducive, if not instrumental, in facilitating deep reflection and reconfiguration. Approaching the Anthropocene as an opportunity, we might examine the human/nature relationship through a new lens; one that acknowledges humanity as a geological force. Though indicators of our activity may have been written into the rock, and the parameters of this 'safe operating space' are being exceeded, many theorists suggest that we are at an inflection point, and that the potential to adjust our trajectory remains.

Haraway (2016) is one such theorist, contending that an adjusted trajectory must involve a reconceptualisation of how we exist in the world: to understand our reality as sympoetic (making-with), dependent upon each other, entangled, rather than autopoetic (self-making). Yet she considers the term 'Anthropocene' (as well as 'Capitalocene') to close off the potential to adjust our trajectory, lending themselves too easily to cynicism and self-fulfilment. These terms play into the idea that it is too late or too challenging to change direction. Haraway (2016, p.55) proposes an alternative way of thinking about our contemporary times – the Chthulucene⁸ – as “a third netbag for collecting up what is crucial for ongoing, for staying with the trouble”. Though this is a rich, engaging concept, I will not explore it further in this thesis, since I wish to maintain a focus on the Anthropocene.

If we consider the Anthropocene to mark a point of liminality, allowing for a multiplicity of potential pathways, it may be possible to configure the concept as a linchpin about which we reorient and choose to proceed differently. In this liminal space we may be able to carve out a reconceptualised and reconfigured order of things. It offers an opportunity for emancipation from repressive institutions and alienating ideas (Bonneuil and Fressoz, 2016). Davies (2016, p.6) advocates for an abandonment of the ideal of 'sustainability' and instead redirects the focus of concern on environmental injustice and cultivating ecological pluralism, away from the “simplifying tendencies of

⁸ The term 'Chthulucene' emerges from chthonic, which literally means subterranean or 'of the earth'.

the Holocene's final phase". The birth of the Anthropocene is an opportunity to be seized and shaped, to negotiate a way through this period of transition. It is, suggests Zylinska (2014), an ethical injunction to think critically about human and nonhuman agency.

This brings me back to the idea of the Anthropocene as a boundary object. A boundary object, as defined by Star (2010, p.603), requires an 'in order to' – it is a particular means for an intended end, as boundary objects are "the stuff of *action*". To understand the Anthropocene as a boundary object is to activate it as a galvanising concept which "enables new conversations and collaborations across significant forms of epistemic difference" (Lorimer, 2017, p.118), acknowledging the liminal space it offers, and facilitating collaboration in the absence of consensus. The extent to which this functions as a more productive boundary object than previous terms such as 'sustainable development' is unclear, and will not be scrutinised further in this discussion. However, what does remain clear is that the potential of the opportunity offered by the Anthropocene configuration requires active participation and a willingness to "cultivate the capacity of response-ability" (Haraway, 2016, p.35).

Activating this opportunity presented by the Anthropocene rests little on its formalisation as a geological epoch in the Geological Time Scale. Geologists have constructed the current timescale with evidence gathered from layers of rock. Currently, the evidence of the Anthropocene is "little more than two centimetres of unconsolidated organic matter" (Davison, 2019, n.p.), and thus it may be argued that the attempt to formalise this epoch is centuries ahead of itself. Yet, whilst some may argue that it is premature to consider the Anthropocene stratigraphically significant, the term has taken on political, social, and philosophical significance beyond the confines of geology. The extent to which the high levels of academic and media attention are increasing the pressure on the geological community to secure formalisation is unclear, though the attempts to accelerate the process, and the uncommonly interdisciplinary composition of the Anthropocene Working Group, indicate a recognition of the broader significance of the term.

The question remains, however, as to how such an opportunity may be mobilised. The Anthropocene disturbs our certainty that the Earth provides a stable background to our existence (Chakrabarty, 2018). The stability of this background offers what Giddens (1991) refers to as 'ontological security', comprising a basic trust in the continuation of everyday life and the self as one understands it. This ontological security functions as a sense of shared normality that keeps existential questions at bay. To engage with the Anthropocene concept may be deeply unsettling, presenting a challenge to how we might render the concept – and the ideas it generates – conducive to reflective action. In this study, I am interested in exploring the role interactive art might play in our

engagement with such a confounding concept, which the following chapter will consider in more detail.

2.9 Conclusion

This chapter has presented many guises of the Anthropocene, from new geological categorisation to cultural zeitgeist, from paradox to potential opportunity. From its origins in Earth system science, I charted the journey of the term into the field of stratigraphy and to formal consideration as a new epoch in the Geological Time Scale. By tracing the political and philosophical implications of the various proposed stratigraphic boundary markers, I offered an illustration of the weight that the term carries with it. Various stories can be harnessed to colour the potential trajectory taken through the Anthropocene, which we might consider to be a potential turning point. The discussion has, I hope, established that the Anthropocene is not a matter that we can solve or retreat from. It indicates not only a new planetary state of affairs, but an altered conceptualisation of the human in the world. Rather than attempt to fix or undo the predicament we find ourselves in – we cannot, after all, erase our geological imprints – we must redraw our maps, redefine our relationship with nature and navigate the new paradigm as best we can.

The Anthropocene concept presents a juncture that offers us opportunity to reflect upon and renegotiate our place amongst nonhuman nature, to relocate ourselves in a temporal pathway and prepare ourselves in community for what may prove to be an unsettled future. In this study, I am interested in exploring the role interactive art might play in our engagement with such a confounding but urgent concept, and how it may enable these opportunities to be realised. In the chapter that follows I offer a definition of Anthropocene art, discuss its characteristics, and explore some of the existing scholarship that examines this intriguing nexus.

Chapter 3 Anthropocene art and its literatures

The Anthropocene term has extended not only beyond stratigraphy into the broader academy, but beyond the academy itself, into the media, popular culture and the art world, morphing from geological concept towards cultural zeitgeist. It has titled blockbuster exhibitions (curator Nicolas Bourriaud subtitled the 2014 Taipei Biennial ‘Art in the Age of the Anthropocene’), newly scored operas (Stuart MacRae and Louise Welsh’s 2019 *Anthropocene* for Scottish Opera), and chart-featured studio albums (Grimes’ 2020 release, *Miss Anthropocene*). The previous chapter in this thesis explored many dimensions and interpretations of the Anthropocene concept within the academy. This proliferation has been no less evident in creative practice: the Anthropocene has offered rich ground for creative practice, as the rest of this thesis will begin to demonstrate.

This section of the discussion will focus in on art that engages with the Anthropocene concept and related themes of climate and environmental destruction, taking a closer look at the approaches it takes and the ideas and questions it surfaces. I begin this chapter by sketching a definition of Anthropocene art and briefly locating the concept in a broader artistic context before moving on to discuss relevant scholarly work. I examine the various roles that these scholars suggest art can play in our understanding and navigation of the Anthropocene. These include assisting our perception of the imperceptible, drawing attention to our entanglement with the environment, visioning alternative futures, and highlighting injustice. I include descriptions of relevant artworks and initiatives as illustrative examples throughout the discussion. I then move on to consider the audience as a site of consultation regarding the roles, value and potential of experiences with Anthropocene art.

3.1 Anthropocene art: context and definition

Anthropocene art sits within a broad tradition of environmental art, encompassing creative work that explores ideas of nature, ecology, sustainability, and the position of the human amongst nonhuman nature. Along with Anthropocene art, the category of environmental art can be said to include sub-genres of land art, earth art and ecological art, or eco-art. These terms are sometimes used interchangeably, and agreed definitions are not easy to locate, but I will attempt to demarcate them sufficiently in what follows.

Despite suggestions that works as ancient as Hadrian’s Wall and Stonehenge (Lucie-Smith, 2004) could be considered environmental art, Thornes (2008) proposes that this

genre of work emerged in the 1960s. It gained pace in the middle of the twentieth century alongside the Great Acceleration and the dawn of space exploration, which together served to illuminate the impact of humanity on the planet. Among creative responses to these issues, land artists, suggests Sleeman (2011, p.201), were:

Among the first to embody and articulate a changed consciousness of the impact we are having on our environment, the beginning of an awareness felt through our bodies and in the world around us as well as in statistics and data.

Land art, which typically involves direct interventions in the environment, marked a shift from the representational toward the performative: a move from landscape to environment, from objects to relationships. Most often occurring in a ‘natural’ outdoor setting, these sculptural interventions in the landscape highlight the relationship of the human with the natural world, through an interaction of artist with environment. Earth art, also known as earthworks, is a genre closely related to land art, though tends to be on a much larger scale and involve direct movement of the earth itself.

Often referred to as the first iconic work of large-scale earth art, Robert Smithson’s *Spiral Jetty* (1970) is a 1,500-foot coil of black basalt rock and earth, extending out into Utah’s Great Salt Lake (Figure 3.1). *Spiral Jetty*, like many other earthworks, is a deliberate, enduring construction in the environment. In contrast, Richard Long’s *A Line Made by Walking* (1967), is a fleeting mark of human intervention, captured only in a photographic image (Figure 3.2). The line of flattened grass through a field gestures toward the deliberate movement of the artist, whose presence in the landscape is emphasised by his absence. Both sculptural works point to natural forces in the environment that may otherwise be overlooked – *Spiral Jetty* as it is submerged, revealed, and eroded over time, *A Line Made By Walking* through its impermanence.



Figure 3.1: *Spiral Jetty* (Robert Smithson, 1970). Photo: George Steinmetz © Holt-Smithson Foundation/Licensed by VAGA, New York.



Figure 3.2: *A Line Made by Walking* (Richard Long, 1967). Photo © Tate

Ecological art, or eco-art – often considered a derivative of land art (Thornes, 2008; Brady, 2016) – tends further towards critique in its examination of existing human/nature relations. It often rejects an anthropocentric perspective, drawing on themes of interdependence as an approach to creative environmental endeavours. Ecological art often maintains “that relations between humanity and its environment, and particularly its natural environment, need to be rethought in favor of a new, re-founded harmony” (Ardenne, 2019, p.51). Like land art, ecological art may directly intervene in the environment, focused on remediation. The work of Helen and Newton Harrison develops in response to ecological challenges, including watershed pollution – *The Lagoon Cycle* (1972-1984) – and climate change – *Greenhouse Britain* (2007-2009) (Figure 3.3).



Figure 3.3: *Greenhouse Britain, First Sketch* (Helen Mayer Harrison & Newton Harrison, 2006). Photo © Feldman Gallery

In 2005, activists Macfarlane and McKibben each lamented the dearth of art that explicitly responded to the threat of climate change and made public calls for artists to rise to the challenge. For Macfarlane (2005), creative work can offer an imaginative repertoire “by which the causes and consequences of climate change can be debated, sensed, and communicated,” opening spaces for dialogue and consideration. McKibben (2005) points to the role that art might play in enabling us to register the situation in our gut, beyond an intellectual knowing. According to Doyle (2011), these pleas led to considerable growth in arts engagement with climate change, which continues to grow today. Climate change art encompasses both activist interventions, such as calling out oil company sponsorship of arts institutions, and work that attempts to mobilise emotions, responding to the growing realisation that an intellectual grasp of the science was not proving sufficient for motivating appropriate action.

Much climate change art attempts to make the phenomenon meaningful beyond lines of data and plots on a graph. In 2018 climate scientist Ed Hawkins created a set of visualisations in which stripes of colour represented historical temperature data for a particular geography. Stripping away all unnecessary detail, Hawkins’ *Warming Stripes* (2018) are reminiscent of colour field paintings in their simplicity (Figure 3.4). His use of blue and red vertical lines to capture multiple data points in one image creates stark, immediate illustrations of a warming planet. The graphic quickly became popular amongst the climate science community and beyond: *Warming Stripes* have appeared on politicians’ lapels, televised weather forecasts, music festival stages, and the front cover of *The Economist* (September 2019). Stripes of colour have conveyed a message of climate change to audiences that lists of data would undoubtedly have failed to reach.

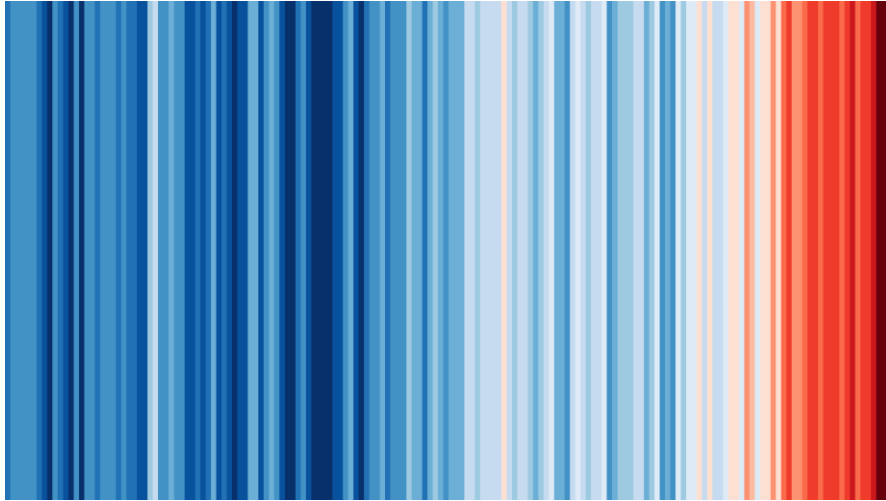


Figure 3.4: *Warming stripes: Annual global temperatures from 1850-2017* (Ed Hawkins, 2018)

Anthropocene art is closely related to all of these aforementioned categories, and indeed, artworks can often fall into several, depending on the view of the classifier: the boundaries overlap and flex. As yet, no shared definition of Anthropocene art has become established, and thus I offer a formulation here to draw its boundaries and distinguish it from climate change art. Whilst climate change art maintains a focus on its namesake, Anthropocene art expands its focus out to the broader concerns that have led us to this epochal juncture, of which climate change is one symptom amongst many.

I define Anthropocene art as creative work (including visual, sculptural, and performance art) that reflects upon, interrogates or responds to the expansive set of concerns provoked by the notion of the human species as a geological force, many of which I presented in the preceding chapter. It plays with the extensive ethical and philosophical implications of the new epochal concept, tugging at its roots.

Anthropocene art expresses the following characteristics:

- Focuses on the nature and scale of humanity's indelible fingerprint on the planet, symptoms of which include the impacts of climate change, vast destruction of habitat, and technofossil⁹ proliferation. In doing so, it foregrounds the relationship between human and environment, and human and non-human.
- Gestures towards the paradox of the Anthropocene as a configuration that is at once both hubristic and humbling for the human species.

⁹ Technofossils are the footprints of the material goods unique to mankind, traces of which will persist in the Anthropocene strata for vast swathes of time, such as mobile phones, toothbrushes, and motorways. The term was coined by Zalasiewicz et al. (2014).

- Sustains the contestation of this paradox: rather than making attempts to overcome it, this work instead offers it up for reflection.

Though the field of Anthropocene art scholarship may still be, in relative terms, in its infancy, there is nonetheless much literature that examines creative practice focused on the implications of our current geological juncture. Much of the literature that I draw upon later in this chapter, and the examples I feature, are focused on climate change. Though the terms are not synonymous, climate change, as “an idea which reveals the changed relationship between humans and nature”, functions as a synecdoche for the Anthropocene (Hulme, 2015, p.899). Thus, these writings hold topical relevance despite the absence of the epochal label. The limitations of this study prevent me from presenting and commenting on the totality of this literature, so in what follows I examine a selection of works most pertinent to this research project. Several of the works are from peer-reviewed journals, others are featured in edited volumes, and the remainder are relevant excerpts from books. Although this selection exhibits a breadth of perspectives, I have drawn on readily accessible literature, and thus it is overwhelmingly situated within a western, anglophone context.

3.2 Reflections on the role of art in the Anthropocene

As stated above, the Anthropocene has resonated with the artworld, naming exhibitions, operas, publications, curricula and more. In her introduction to the edited collection *Art, Theory and Practice in the Anthropocene*, Reiss (2019, p.v) echoes a common sentiment in her declaration that “art is an important channel through which people encounter issues related to the Anthropocene.” Though these statements are commonplace, details as to how, why, when, where and for whom art is an important channel are often less forthcoming. Nonetheless a narrative has emerged, particularly amongst media headlines and exhibition titles, that champions art as a saviour in the Anthropocene. Though not overwhelming in volume, the instances of these formulations have increased. A selection follows:

- What the warming world needs now is art, sweet art – McKibben, *Grist*, 22 April 2005
- Can artists save the planet? – Glazebrook, *The Spectator*, 19 May 2007
- Yes, Naturally: How Art Saves the World – at Gemeentemuseum Den Haag, 16 March, 25 August 2013
- The arts have a leading role to play in tackling climate change – Serota, *The Observer*, 20 November 2018
- Can Art Help Save the Planet? – Tugend, *The New York Times*, 12 March 2019
- From baboon raps to Extinction Gongs: can climate art save the world? – Wolfson, *The Guardian*, 20 July 2019

- Can arts help save the planet? – Loiseau, *Financial Times*, 26 September 2019

Though many of these appear to be hyperbolic turns of phrase employed to grab attention, together their implications become more significant. The idea that art may ‘solve’ the deep-set, complex challenges that characterise the Anthropocene risks dismissing their intractability, as well as encouraging tokenistic applications of creative practice. Thus, the finer details of engagements with these works of art are of particular importance if we are to fully comprehend how art might contribute to weathering the Anthropocene storm.

Without exception (if to varying degrees) all of the scholars I draw upon in the following discussion suggest that there is a role for the arts in aiding our understanding and navigation of the Anthropocene. There is subtle variety amongst the roles that they identify, though they centre on the notion that engagement with works of art can offer potential routes to different ways of seeing, knowing and being in the world. Some limit this potential to a subset of creative practice, pointing to specific essential characteristics, recommending particular approaches for artists to employ in their engagement with Anthropocene ideas. The following sections review these assertions and variations. At points I offer brief descriptions of relevant artworks and initiatives as illustrative examples throughout the discussion.

I will examine how art may assist our apprehension of the Anthropocene by making visible those aspects which are invisible, how it can draw attention to our entanglement with nonhuman nature, and how it might activate different ways of knowing by working with our senses beyond the visual. I move on to explore how art can offer opportunities to imagine different futures for society and the planet, how it may function as a process of ecological regeneration itself, and how it is able to shine a light on practices and structures that perpetuate problematic conditions of the Anthropocene. I finally outline how some scholars argue that form, rather than content, may be central to an aesthetic of the Anthropocene, before considering the possibility that art may function to maintain the status quo, obscuring the opportunity that the Anthropocene juncture presents.

3.2.1 Making perceptible the imperceptible

The complexity of the Anthropocene, as I outlined in Chapter 2, is made evermore intractable by the abstract and imperceptible phenomena that it comprises. Many features of the Anthropocene – such as climate change, technofossils, biodiversity loss –

only become apparent at scales far beyond the immediate grasp of an individual human or community. As Falb (2015, p.308) suggests:

The Anthropocene is a heterogeneous conceptual object escaping immediate visibility. You cannot go outdoors to find it. You cannot take a picture of the whole Earth to see it. Every sighting remains inadequate.

Even a collection of sightings would fail to indicate the sheer scale and geological significance that is the Anthropocene. This presents a particular challenge because, as Doyle (2011, p.4) points out, an “investment in the visible as evidence of truth” pervades contemporary Western epistemological systems. It is here that creative practitioners may intervene, working to make the invisible visible by marking events, illustrating data or representing scales that we are otherwise unable to access. Falb (2015) believes Anthropocene art is set apart from ecological or environmental art in the way it grapples with phenomena that escape easy visualisation.

A collaboration between photographer Edward Burtynsky, filmmaker Jennifer Baichwal, and cinematographer Nicholas de Pencier attempts to visually document markers of the Anthropocene that evade our perception due to their scale. *The Anthropocene Project* (2018) employs photography to capture locations featured in the research of the Anthropocene Working Group (Figure 3.5). The artistic team have strived to capture the “most spectacular evidence of human influence” (Burtynsky, 2018), drawing particularly on imagery of terraformation; human-caused landscape transformation. These haunting depictions of sprawling landfill sites and the hypnotic shapes of potash mines epitomise the Anthropocene as visual spectacle. This documenting of humanity’s imprint on the surface of the planet through an ‘aesthetics of destruction’ risks a dangerous blurring of horror and wonder, evoking notions of the sublime (Mirzoeff, 2014).



Figure 3.5: Clearcut #2, Palm Oil Plantation, Borneo, Malaysia (Burtynsky, 2016)

Aerial photography is particularly emblematic of an aesthetics of the sublime, at once exhibiting both the power and powerlessness of humanity, a stamp of the Anthropocene as paradox (Horn, 2019). Capturing the scale of human destruction from a distanced gaze, these images not only evidence the scale of ecological destruction but function to uphold an understanding of nature as something ‘out there’, and the destruction as disconnected from our own choices and actions (Doyle, 2011). Moreover, Demos (2017) points to the way in which these observations universalise responsibility and fail to interrogate the structures and systems of capitalism that have driven such environmental devastation, which is oftentimes entwined with social injustices. This form of visualisation risks obscuring the opportunity for action that the Anthropocene presents.

3.2.2 Revealing entanglement and embeddedness

Far from distancing an audience, other scholars suggest that art harbours the potential to highlight the entanglement of humanity with its environment. Morton (2014, p.40) contends that some works of art may bear witness to our becoming “irreversibly aware of the existence of nonhuman entities in a way that decisively explodes modernity”. Such artworks expose the distinctions upon which we organise our societies – separating culture from nature – as illusory. Human artefacts – including art objects – Morton stresses, are directly affected by hyperobjects that are tied up with the Anthropocene, such as global warming, plutonium, and Styrofoam, all of which are

vast, or ‘hyper’, in some dimension. A term developed by Morton (2013), a hyperobject is a thing massively distributed in time and space relative to humans. So vast are these entities, that “one only sees the pieces of a hyperobject at any one moment. Thinking them is intrinsically tricky” (Morton, 2013, p.4) as they evade our perceptual grasp. Art may be able to evidence the reality of these hyperobjects.

Morton (2014) proceeds to draw extensively on Hegel’s dialectical accounts, applying them to art history and eventually proposing an Asymmetric Phase of art. This latest phase is one in which content outstrips its substance, whilst substance concurrently outstrips content in “an asymmetrical confrontation between the human and the nonhuman” (Morton, 2014, p.46). Art in the Asymmetric Phase has three properties: interobjectivity, evidencing the betweenness of things; hypocrisy, highlighting a perpetual inadequacy of representation; and as collaboration between humans and nonhumans. Together these properties, posits Morton, illuminate our embeddedness. Art is necessarily created *within* the embrace of a hyperobject, in a shared space between entities, and drawing on nonhuman materials and forces. This begins to take us into the realms of new materialism that the structural limitations of this thesis prevent me from exploring further at this point.

In her presentation of ‘planetary art’ as a revision of earth art, Page (2020) suggests that by drawing attention to forces impervious to human action – earthquakes, gravity, solar flares and so on – art may engender a planetary perspective: a sense of self as part of a planetary system. Such a perspective, she contests, is “crucial to negotiating a path through the Anthropocene to a future era in which human activity will be less destructive” (Page, 2020, p.289). Shifts in perspective enable an appreciation of different ways of knowing that may cultivate “environmental relations based on connections of entanglement rather than those of separation, domination, and distance” (Hawkins and Kanngieser, 2017, p.7). Recognising our embeddedness is assumed to lead to a revised relationship with the environment.

Page (2020) draws on the work of four contemporary artists based in Latin America whose work explores forces impervious to human action. The central argument put forward is that “art may engender a more genuinely planetary perspective when it pays attention to those forces we cannot compel” (Page, 2020, p.273), specifically in its gesturing towards the limits of human agency and subsequent challenge to an anthropocentrism. One of the works she examines is *Flatsun* (2011) by Rafael Lozano-Hemmer, an interactive solar model that simulates solar flares and sunspots (Figure 3.6). Page (2020, p.276) points out how the interactivity of *Flatsun* “allows the work to convey more effectively some of the contradictions that mark Anthropocene thought on human agency”. The way in which the solar flares become more turbulent when movement is detected in front of the work reveals a hubris of our presumption that the

sun would respond to human actions whilst simultaneously drawing attention to the connection between our actions and geophysical dynamics. Highlighting the paradox of the Anthropocene, the work draws our attention to the extent to which we are embedded within, and part of, a much larger planetary system.



Figure 3.6: *Flatsun* (Rafael Lozano-Hemmer, 2011). Photo © Antimodular Research

3.2.3 Engaging the senses

As indicated above, vision has dominated a hierarchy of the senses, at least across the western world, aligning with the traditional distance of objectivity and rationality. Artists have played with this sensory hierarchy, directing our attention through other sensory inputs, opening up new ways of making sense of the world. This is particularly evident in the case of interactive art, that Hawkins (2010, p.324) suggests can foster “an understanding of the experience of art grasped not as a solely intellectual act, but by the complex perception of the body as a whole”. Engagement with such artworks begins to unpick the traditional western hierarchy of mind over body, reaffirming the senses as “the principal means whereby the body mingles with the world and with itself” (Serres, 1985, p.3).

Art is, declare Davis and Turpin (2017, p.3), “central to thinking with and feeling through the Anthropocene”, and thus necessary to our navigation of the Anthropocene. The sensory and affective dimensions of encounters with art offer a more direct experience with what are abstract concepts. Hawkins and Kanngieser (2017) examine several audio-visual artworks, delineating how these works enable an apprehension of

environment through the senses in ways that disrupt the hierarchy, activating experiential and emotional responses. Offering an account of Polli's *Heat and Heartbeat of the City* (2004), the authors describe how anxiety and trepidation are invoked through unsettling sonic frequencies and intensely coloured images (Figure 3.7). They point to how *Archive of Vatnajökull (the sound of)* (Paterson 2007-2008) collapses the temporal and spatial distances of climate change by establishing a connection to the Vatnajökull glacier via a telephone line (where a hydrophone was placed): callers were able to listen directly to the sounds of melting ice (Hawkins and Kanngieser, 2017).

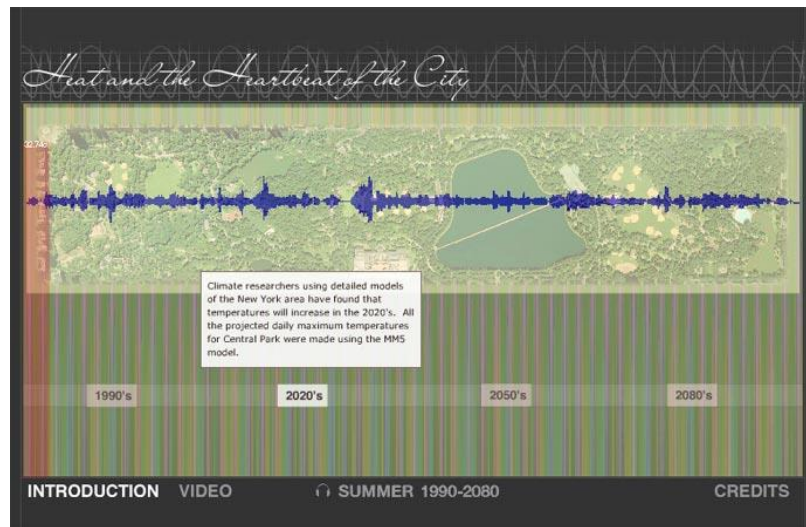


Figure 3.7: Screenshot of *Heat and the Heartbeat of the City* (Polli, 2004)

Studies of creative practice that engage with Anthropocene ideas can, Hawkins and Kanngieser (2017) assert, offer valuable insight for the communication of climate change more broadly. Through their analysis of these works, the authors draw out lessons that can be transferred to other cultural forms, particularly regarding the incorporation of affect, emotions and sensory experience. They do, however, take care to stress that such approaches should not replace those focusing on narrative, representation or symbolism. Instead they advocate a layering of different ways of knowing to create far richer effects, drawing on the body as well as the mind. This becomes what Galafassi and Tàbara et al. (2018) suggest is an expanded understanding of learning capacities, weaving embodied and emotional practices together with intellectual ways of knowing.

Amidst a contemporary western culture that Sontag (1966) suggests dulls our sensory experience – through excess and overproduction – installation art may encourage a renewed sensitivity to bodily aspects of encounter with an environment. Large-scale installations and sculptural works by Olafur Eliasson, for example, draw the audience's

awareness to their own sensing and feeling in a “moment of perception when the viewer stops to consider what it is they are experiencing” (Duxbury, 2010, p.297). In 2014, Eliasson’s *Ice Watch* (Figure 3.8) saw twelve large blocks of the Greenland ice sheet arranged in Copenhagen’s City Hall Square, coinciding with the publication of the fifth assessment report from the Intergovernmental Panel on Climate Change (IPCC). Devised to bring the effects of climate change closer to home, passers-by could witness directly the melting of these mini icebergs, arranged as a clock face. Eliasson encouraged visitors to interact with the blocks of ice, to touch, smell and listen to them. Not only does the work transcend physical distance that otherwise impedes sensory experience, it also collapses temporal distance: the popping sounds that were audible from the ice indicate the release of air bubbles captured 10,000 years ago. By playing with sensory registers, artists sensitise audiences to aspects of the Anthropocene that may otherwise be overlooked. Such practices may begin to reveal the limitations of existing knowledge systems and promote the integration of more emotional and embodied ways of knowing.



Figure 3.8: *Ice Watch*, City Hall Square, Copenhagen (Eliasson 2014). Photo © Anders Sune Berg

3.2.4 Visioning alternatives

As a vehicle of the imagination, art offers us the potential to envision alternative worlds, beyond the boundaries of our own, and sketch out possible futures (Reiss, 2019). In particular, we might reimagine futures outside of the forces that led to the

Anthropocene, “beyond the cynical recklessness of the myopic capitalist horizon” (Davis and Turpin, 2017, p.10). Outside of the confines of scientific inquiry, artistic practice creates spaces to both pose and broach problems differently, providing what Davis and Turpin (2017, p.7) suggest is a “polyarchic site of experimentation”. Such imaginative experiments are also necessary to prepare society for meeting and living in a radically altered climate, perhaps one never before experienced by humans if the global average temperature increases by much more than two degrees (Galafassi and Kagan et al., 2018). Artists can give tangible form to alternatives and can open up spaces of potential and possibility.

Tomas Saraceno is one such artist, who proposes a post-Anthropocene, post-fossil fuel alternative: the Aerocene. This configuration sees humanity turn to what is above – the air, the sun, the wind – and proposes the harnessing of sustainable flight. “We like to think of ourselves as living on the Earth's surface” suggests Saraceno, “but we are living at the bottom of an ocean of air” (Martin, 2015, n.p.). Saraceno’s work is not purely speculative, though much of it begins as such. His *Aerocene* project (2006) is an interdisciplinary collaboration featuring a series of art installations and experiments reimagining fossil-free mobility, with aerosolar sculptures at its core (Figure 3.9). The form these sculptures take has evolved over time, though all become buoyant only with the heat of the sun and infrared radiation from the surface of Earth, becoming prototypes for a new era.

In 2015, at the 21st Conference of the Parties to the United Nations Framework Convention on Climate Change (COP21) in Paris, Saraceno launched the Aerocene Foundation which proposes to address challenges of the Anthropocene through inspiring an independence from fossil fuels and highlighting a symbiosis with the natural world. The technology and design behind the aerosolar sculptures are open source, encouraging a DIT – ‘Do-It-Together’ – approach amongst the global community that has gathered around the project. This ethos of collaboration is central to the project’s Aerocene Backpack, an aerosolar sculpture within a portable flight starter kit that comprises several sensors that capture atmospheric data to then be shared. Users are invited to improve on the mechanics and technical functionality of the Aerocene Backpack. Not only is Saraceno’s initiative visioning an alternative future, but it is enacting alternative forms of creative practice.



Figure 3.9: 83AQI Free Flight (Saraceno, 2019) Photo © Studio Tomás Saraceno

However, Anderson (2015) warns against a solution-oriented discourse that she argues risks implying an unfounded simplicity. Creative work that proposes action, she maintains, further reinforces an attitude of human agency and dominance. In particular, she points to curatorial projects including the Serpentine Gallery’s ‘Today We Reboot the Planet’ (2013) and The Hague’s ‘Yes Naturally: How Art Saves the World’ (2013) that reinforce solutionist, and often simplistic narratives. Conceptual and speculative design is the alternative Anderson (2015, p.338) points to, which she suggests may foster:

Thinking about how we relate to technology and science, how we organize ourselves politically and socially, and how we define ourselves in the broader ecological assemblage.

Such work refuses to shy away from difficult, unsettling questions and makes no attempt to neutralise the complexity that the Anthropocene harbours.

One of the three creative initiatives that Anderson (2015) features in her discussion is *Dear Climate* (2012) by Marina Zurkow, Una Chaudhuri, Oliver Kellhammer, Fritz Ertl and Sarah Rothberg (Figure 3.10). This online collection of posters, letters and audio meditations offers a playful platform to explore climate change, inviting us to consider what it means to live in the Anthropocene, rather than perceive it as a dilemma to overcome. In place of instrumentalism and quick fixes in the face of climate change, it offers murmurings of radical social and political reorganisation for living within the Anthropocene. It is this type of initiative – stimulating critical thinking rather than simulating action – that Anderson (2015) suggests has the potential to be most constructive, enabling us to envision alternative futures to aspire to.



Figure 3.10: A selection of posters from *Dear Climate* (Chaudhuri, Ertl, Kelhammer, Zurkow, 2012)

3.2.5 Restorative and regenerative practices

Rather than act through the agency of an audience – attempting to raise awareness of a cause or engender an ecological consciousness, for example – some works of environmental art (including Anthropocene art) may themselves function as direct agents in the restoration of ecosystems. Working with and in the land, artists intervene in an environment with the aim of restoring it to some former state or ridding it of evidence of human impact. Macpherson (2018) offers a reading of Caroline Wendling’s *White Wood* (2014), a living artwork of deciduous woodland in Aberdeenshire, Scotland, planted on a site of previously cleared spruce (Figure 3.11). Amongst the hundreds of trees planted as a living monument to peace are 49 oak saplings grown from acorns gathered from Joseph Beuys’ *7000 Oaks*, symbolically uniting nations. The local community were invited to participate in the project, through both consultation and planting. Macpherson (2018) points to the extended nature of community that the project engages with, of nonhuman collaborators both living and non-living (including tools, tree guards, and microorganisms). As an artistic intervention, this work attempts to “renew humanity’s relationship with, or treatment of, the earth; to cultivate a relationship that is not based on the instrumentalization of the natural world” (Macpherson, 2018, p.249). We can consider this work to restore not only a thriving woodland ecosystem, but also restore a generative rather than destructive human/nature relationship.



Figure 3.11: *White Wood* (Wendling, 2014). Photo © Deveron Projects

Warming seas and terraformation of the Anthropocene have significant ramifications for marine species and the shape of marine landscapes. The submerged figural sculptures of Jason deCaires Taylor function as artificial reefs, acting as hard substrate to which algae, coral and sponge can establish themselves (Figure 3.12). The life-sized sculptural figures are constructed of pH-neutral, marine-grade materials with surfaces that are deliberately textured to allow for the attachment of reef organisms. As these organisms colonise the work, the human figures are transformed into the site of nonhuman communities. Often located in areas of barren seabed, deCaires Taylor suggests that these sculptural forms are important for the conservation of established reef systems by drawing visitors away from them, towards an alternative site that has been designed to receive tourists. In Grenada, a collection of these sculptures were material to the creation of an extensive marine protected area, contributing to ecological restoration structurally, culturally and economically (deCaires Taylor, n.d.).



Figure 3.12: *Crossing the Rubicon*, Lanzarote, Spain (deCaires Taylor, 2017)

Mel Chin's *Revival Field* (1991) involved collaboration with a soil and crop production expert to restore a hazardous landfill site to health through a reconceptualisation of the sculptural process: toxic land as sculptural material, the process of 'hyperaccumulation' as the tool with which to transform the land back to health (Figure 3.13). This sculptural ecology progresses invisibly below ground as specially chosen plants extract toxic metals like cadmium, zinc and nickel from the soil through their root systems. This 'green remediation' is completed through the harvesting and incineration of the plant material to recover the heavy metals. Chin, suggests Ardenne (2019, p.62), functioned "like a new kind of farmer, linking aesthetic creation and the social practice of new forms of agriculture". *Revival Field* was instrumental in the validation of green remediation as a viable technological process. Chin suggests that it was only through approaching it as a work of art that they were able to embark on this demonstration (Ryan and Chin, 2006). *Revival Field* has now been replicated at various sites across several geographies. Working with the flows and processes of the local ecosystems, these artists use their creative practice to enact a restoration in the face of destructive human activity.

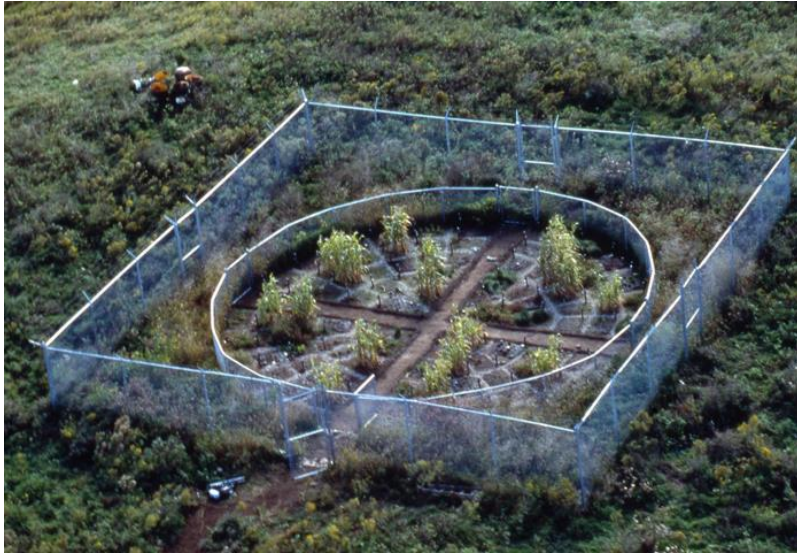


Figure 3.13: *Revival Field* (Chin, 1991)

3.2.6 Highlighting injustice

Anthropocene concerns are not solely ecological matters but are fundamentally entangled with issues of social injustice and unsustainable economic structures. Artists have long used their practice to expose the realities and limitations of our current social order, revealing its fabrication and mutability. This “critical art”, suggests Rancière (2010, p.142), is “an art that aims to produce a new perception of the world and therefore create a commitment to its transformation”. Such practice strives to stimulate a process of inquiry in others. Subversion forms the first stage of this stimulation: an audience is confronted by a form of strangeness. An awareness of what sits beneath the strangeness is then expected to develop, which then mobilises the audience to intervene in the world, challenging the status quo. The perceived simple linearity of this process, however, belies deep assumptions that each step will lead to the subsequent, and a tension that undermines its effectiveness: awareness of the strangeness neutralises the strangeness itself.

Brandalism is an international collective of artists using creative action to challenge corporate power and consumerism, focusing on the social and environmental implications of the capitalist system. They refer to their approach as ‘subvertising’. In 2015 they (illegally) placed over 600 original artworks in bus shelter advertising panels across Paris, coinciding with COP21 (Figure 3.14). This extensive campaign employed the logic of appropriation to critique the complicity of advertising in the fuelling of dangerous climate change. Though there may be a normative ambivalence to this approach, Harrebye (2015) argues that its transparency justifies the means: in contrast to guerrilla marketing, Brandalism makes no attempt to deceive, delude or coerce, but

instead intends to provoke reflection, providing room for interpretation in handing power to those encountering their work.



Figure 3.14: One of the 600 ‘subvertisements’ installed in Paris the day before COP21 (Brandalism, 2015)

Creative practice is also employed to challenge parts of the art world itself. Since 2004 Art Not Oil, a coalition of campaign groups committed to ending oil industry sponsorship of the arts in the UK, has staged creative interventions to draw attention to these controversial associations. Wu (2002, p.2) points out that since the 1980s modern corporations have:

Successfully transformed art museums and galleries into their own public-relations vehicles, by taking over the function, and by exploiting the social status, that cultural institutions enjoy in our society.

These relationships give oil companies social licence to operate, a green-washed veneer behind which they continue to extract fossil fuels, and the cultural institutions become compromised amidst accusations that sponsors hold curatorial influence.

The interventions of these groups are enacted at what Mahony (2017) terms an ‘interstitial distance’, operating within the cultural institutions but intervening at arm’s length. They reject the binary of attempting to reform the system from within versus abandoning the system to establish alternatives on the outside, and instead carve out spaces of opposition *against* the state from *within* state territory (Mahony, 2017). One action in particular clearly demonstrates this strategy. In 2012, *Liberate Tate* convened 100 volunteers to manoeuvre a wind turbine blade past a series of security guards and into the Turbine Hall of the Tate Modern (Figure 3.15). The blade was an uninvited gift to the gallery: the group were making use of a legal clause – Section 7 of the Museum

and Galleries Act of 1992 – that made the Tate legally obliged to consider the gift for their permanent collection at Board level. *The Gift* (2012) not only drew public attention in the gallery space, but also enforced a confrontation with the issue within the structures of control. BP sponsorship arrangements with Tate, Edinburgh International Festival, and most recently the Royal Shakespeare Company, have since come to an end. In both this example, and the case of the subvertisement campaign, creative interventions have made use of existing structures in order to challenge and subvert the status quo.

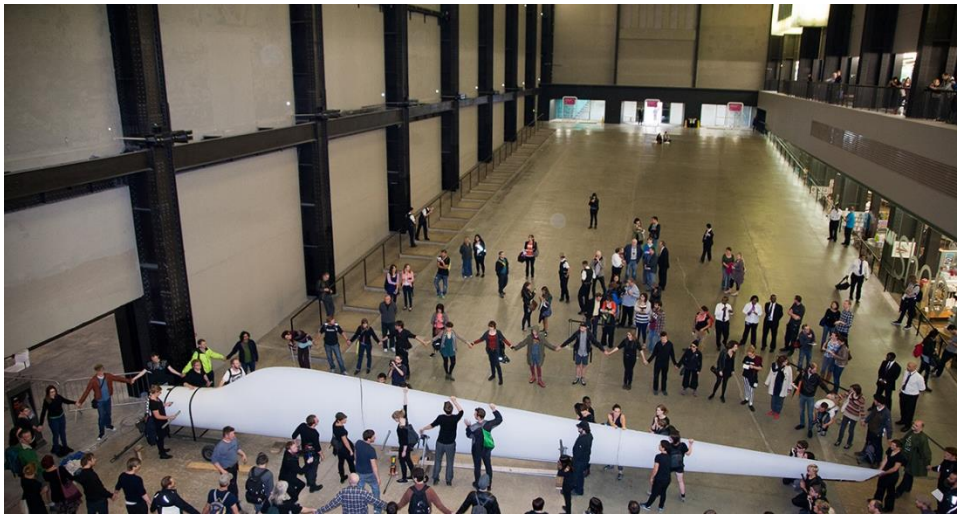


Figure 3.15: Liberate Tate delivers *The Gift* (2012) to the Tate Modern. Photo © toastyoneuk on Flickr

Narratives of the Anthropocene have tended to avoid the issues of unequally distributed agency, vulnerabilities and responsibilities amongst the human community (Nixon, 2014). In her consideration of the *Re-Locate* (2015) initiative (Figure 3.16), Sze (2015, n.p.) suggests that art may offer “a potential window into the lack of cultural recognition for the most oppressed and disenfranchised”. Creative practice has the potential to spotlight places and communities that are most overlooked but most at risk, and those who are least responsible but will be hardest hit by the challenges of the Anthropocene. In doing so, art facilitates a ‘politics of seeing’ (Sze, 2015).

Sze (2015) emphasises the importance of highlighting artists and artworks that directly address this inequality and amplify underrepresented perspectives. *Re-Locate* (2015) is a project focused on the community of Kivalina, an Iñupiaq village in Alaska, threatened by the melting of permafrost and coastal erosion. *Re-Locate* (2015) comprises a collective of creative practitioners employing social arts methods to facilitate a community-led and culturally specific relocation of the village. It is

introduced by Sze (2015, n.p.) as a “complex model of social art praxis that draws on a long-term engagement model”, centring voices that are often unrecognised. She asserts that the arts present a “unique possibility to inhabit different worldviews, to promote more recognition, and thus to contribute to reducing political injustice” (Sze, 2015, n.p.). Projects like *Re-Locate* (2015) also offer a glimpse of the reality of climate change and its very real and present implications, the unequal distribution of which surfaces questions of social injustice.



**Figure 3.16: Kivalina Biochar Reactor that formed part of the *Re-Locate* project.
Photo © Re-Locate Kivalina**

3.2.7 A focus on form

In contrast, Horn and Bergthaller (2020, p.96) propose that claims such as those made above fail to add up to an aesthetics of the Anthropocene, but instead “reformulate some fairly conventional expectations of art and its capacity to make the world a better place”. The argument made here is one of qualification: Horn and Bergthaller do not argue that art has no role to play, but instead urge a closer consideration of how this role may be played. The Anthropocene, they point out, not only unsettles dualisms central to our Western lifestyles, but also fundamentally unsettles aesthetic conventions. A collapse of the divide between subject and object disturbs the foundation of modern aesthetics. Thus, a genuine aesthetics of the Anthropocene “must ask what it means to confront a deeper understanding of the Anthropocene, not in the content but in the *form* of aesthetic representation” (Horn and Bergthaller, 2020, p. 97, emphasis added). Anthropocene art must address issues of scale and entanglement as a matter of form rather than thematic content.

An aesthetics of the Anthropocene, they suggest, must go beyond addressing the alienation of the human from nature, and contend with “the *becoming uncanny* of the lifeworld” (Horn and Bergthaller, 2020, p.101, emphasis in original). It must tackle central features of the Anthropocene: an ingrained latency; growing awareness of entanglement; the clash of scales: temporal, spatial and agential. All, they contest, have to be tackled as issues of *form* rather than thematic content. By way of illustration, the authors point to the work of Tara Donovan, who accumulates everyday objects – such as plastic cups – in vast quantities to create extensive fractal sculptures (Figure 3.17). Donovan’s works epitomise, suggest Horn and Bergthaller, a ‘post-natural nature’. These accumulations reflect Anthropocene scale effects: “one plastic cup is just a flimsy shred of polystyrene, billions of them are an ecological disaster” (Horn and Bergthaller, 2020, p.104). They suggest that Donovan’s creations work to both erase and amplify the materiality of the individual objects: from an industrially manufactured throwaway item she generates what appear to be organic forms. She plays with “the *form-giving processes of nature*, pulling them out of latency through a translation in scale” (Horn and Bergthaller, 2020, p.105, emphasis in original). Rather than examining modes of being, Horn and Bergthaller argue that Anthropocene art must concern itself with matters of form.



Figure 3.17: *Untitled (Styrofoam cups)* (Donovan, 2003/2008)

3.2.8 Maintaining the status quo

In this examination of how art may enable our engagement with and navigation of the Anthropocene, it would be remiss of me to neglect the converse: that art may have no role to play. Indeed, it may obscure the fact that any threshold has been crossed, or even

that a threshold exists at all. Such works conceal the real emergency of our time, which Zabala (2017, pp.4-5) contends is the lack of emergency itself:

Although the media - traditional, online, and social - are full of ‘events’ and ‘emergencies,’ the dominant impression of citizens in industrialized countries, whether at their centers or in their postcolonial slums, is that nothing new happens: reality is fixed, stable, and secured.

Art, he suggests, has the potential to shake us from this false impression, drawing attention to the social paradoxes and environmentally destructive nature of this paradigm that has driven us into the Anthropocene. However, whilst such art may rescue us *into* a sense of emergency, other creative works serve to rescue us *from* this emergency, recreating the cultural politics that establishes a veneer of stability, absent from emergency. Artworks that expose the façade of an absence of emergency do so through illuminating hallmarks of the Anthropocene, including social paradoxes and environmental degradation. The argument put forward by Zabala suggests that any work that fails to thrust us into the emergency is complicit in maintaining the status quo.

3.3 Asking the audience

Though the literature I have discussed so far makes valuable contributions to the understanding of Anthropocene art, it offers limited consideration as to the resonance of these works beyond the academy. This absence risks overlooking the texture and nuance that sits beneath the meeting of art and audience. For example, Hawkins and Kanngieser (2017, p.1) offer an account of their experiences with three artworks, delineating the mechanisms through which they were able to develop an “attentiveness towards things that are distant in space and time or simply not human”. However, I question the extent to which such appraisals can be assumed to hold across an audience without a firm grounding in the academic field and extended experience of art criticism. If we wish to uncover ways in which works of art can play a role in aiding our navigation of the Anthropocene, then it may be prudent to explore the experiences of a broader audience, in particular for works that are intended to appeal more widely.

In this final section I will consider literature that to various degrees, and in different ways, draws conclusions from inquiries into direct audience experience with Anthropocene artworks. Several scholars have remarked upon the absence of research to understand audience engagement with Anthropocene art (Hawkins and Kanngieser, 2017; Burke et al., 2018). They identify a need to understand how these works are received by a non-expert audience. Of the four works I discuss, three focus specifically on climate change art, whilst the other considers a work that addresses the Anthropocene more broadly. As I outlined above, given the little research that has been

conducted on audience experience with Anthropocene art, and the relationship between the terms, I will study these alongside each other.

By gathering audience responses to an exhibition at the Art Gallery of Ontario, Hudson Hill (2020) makes a claim for the role of art galleries as sites of learning about anthropogenic planetary change, which she suggests is often overlooked. Hudson Hill holds that museums remain trusted sites of information, spaces within which to explore the shape and challenges of this new epoch. Her focus is on the gallery's 2018 *Anthropocene* exhibition which featured work from Burtynsky, Baichwal and de Pencier's *The Anthropocene Project* (2018). This work documents the human signature on the fabric of the Earth, through photography, film installations and augmented reality. The end of the exhibition featured an emotional check-in poll, asking visitors: "In a word, how does what you've seen here today make you feel?" (Hudson Hill, 2020, p.85). Over 128,000 responses were submitted, selecting from one of seven options onscreen: unconcerned, worried, angry, inspired, sad, motivated, and suspicious. Perhaps unsurprisingly, worried and sad consistently topped the poll results.

Considering the finite nature of the options available, we might question the range of insight that this poll can offer. However, Hudson Hill (2020) also draws on more extended responses from visitors that were gathered as part of a summative evaluation of the exhibition. Direct quotations featured by Hudson Hill express emotional and visceral responses to the work, including feelings of depression, awe and anger. Anticipating such a scenario, the curators included a 'Change Station' area within the *Anthropocene* exhibition: a space that featured information, links and resources outlining how the works connected with the daily lives of visitors and ways in which they may take action. Visitors indicated an appreciation for the agency this proffered to them and valued the dialogue with other visitors that this space fostered. Hudson Hill (2020, p.87) uses these insights to enrich her argument and illustrate her conclusion that "by creating curiosity, stirring emotion, and provoking dialogue, art forges powerful pathways to learning about our planet and the human signal we are embedding within it."

Other research is located more firmly in the field of psychology. To investigate the psychological effect of 'activist art' on viewers, Sommer and Klöckner (2019) studied artworks featured as part of ArtCOP21, a festival of creative work that ran concurrent to COP21, the 2015 international climate negotiations in Paris. A total of 37 works were included in the study, with a primary focus on visual art, though some participatory work was considered. The researchers proposed that environmental psychological theory may assist in uncovering the mechanisms by which experiences with art can motivate people to act in a more 'climate-friendly' manner. Their focus was on identifying emotions triggered in the 827 individuals they engaged with, and

highlighting differences amongst the artworks. A questionnaire was the tool of choice, gathering data on sociodemographic profiles, experience with art, environmental attitude, appraisal of the work, and emotional responses, these final few of which were all measured on a 7-point Likert scale.

From their analysis, Sommer and Klöckner (2019) draw two conclusions. Firstly, they suggest that activist environmental art should “move away from a dystopian way of depicting the problems of climate change” (Sommer and Klöckner, 2019, p.14). They instead propose that artists should concentrate on offering solutions and emphasising the interconnectedness of nature. This assertion is at odds with the argument put forward by Anderson (2015) who suggests that solutionist narratives act to undesirably reassert human dominance over nature rather than dismantle it. Secondly, they point to the importance of moving art out of institutional spaces and into the public realm (Sommer and Klöckner, 2019). This is not only to reach a broader audience, but to establish contexts for art that enable personal connections to occur more easily. Both conclusions are reaffirmed in the final two studies that follow.

Also located within the field of social science, Burke et al. (2018) employ interpretive techniques to examine to what extent participatory arts initiatives achieve affective public engagement with climate change. They propose that such interventions might “hold the key to unlocking broader climate compatible behaviour” (Burke et al., 2018, p.95), as audience involvement and opportunities for dialogue enable peer-to-peer learning. Burke et al. (2018) focus on community-based art project *Bird Yarns* (2012), which gathered a community of knitters that created a flock of ‘lost’ Arctic terns to sit on Tobermory pier on the Isle of Mull, Scotland (Figure 3.18). The researchers chose to employ Q methodology in order to maintain a focus on local, rather than expert, discourses and interpretations of climate change. From semi-structured interviews with local residents the researchers developed a set of 36 statements that 15 participants responded to using a Likert scale.



Figure 3.18: *Bird Yarns* (Nelson, 2012) on Tobermory Pier. Photo © Sarah Darling.

Burke et al. (2018) found that study respondents who already bought in to the environmental agenda considered the artwork to be underwhelming and were unmoved by it. At the other end of the spectrum, those who harboured a more sceptical stance regarding climate change found the initiative of little interest. The more ambivalent the respondent was about climate change, the more they enjoyed the work and were willing to engage with it. This suggests that existing strong attitudes regarding climate change may limit the potential impact an artwork can have. Ultimately Burke et al. (2018, p.103) conclude that whilst they cannot claim that an encounter with climate art will lead directly to changes in behaviour, it could “influence the means by which future information about the climate or the environment is assimilated” adjusting the frame through which we see the world. They go on to add that integrating such artwork in the local environment and into the everyday lived experiences of a community “appears to play an important role in engaging those who might not otherwise be motivated to learn about climate change” (Burke et al., 2018, p.103) echoing sentiments from Sommer and Klöckner (2019).

The final paper I shall explore in this section blends environmental psychology and empirical aesthetics to evaluate the effect of climate art on pro-environmental intentions. Sommer et al. (2019) hypothesised that pro-environmental behaviour would be stronger after experiencing the work in question: *Pollution Pods* (Pinsky, 2017). Visitors to *Pollution Pods* (Figure 3.19) move through a series of five geodesic domes, each of which emulates the atmospheric conditions of five specific locations: Trondheim, Norway; London, United Kingdom; Sao Paulo, Brazil; New Delhi, India; and Beijing, China. To assess cognitive and emotional responses, visitors were asked to respond to two questions before entering the domes and to complete a longer questionnaire as they emerged from the experience. Over two and half thousand

participants were asked to indicate alignment with statements on a Likert scale to gauge environmental attitudes, emotions evoked and thoughts that arose during their time in the *Pollution Pods*. The authors of this study take their research a step further than others discussed so far, with an attempt to introduce a longitudinal aspect by measuring the extent to which intentions to act play out into real behaviour change. Each participant received a log-in code for an existing platform that encourages and tracks sustainable behaviour. Researchers intended to track relevant activity of participants over the two-week period following their visit to *Pollution Pods*.



Figure 3.19: *Pollution Pods* (Pinsky, 2017) at Somerset House in London, UK.

Unfortunately, participant sign up to the platform was extremely low, so this approach did not elicit enough data to assess impact on behaviour. However, through the questionnaire, the researchers were able to discover that there was a very slight increase in pro-environmental intentions following a visit to the art installation. Thus Sommer et al. (2019) offer a more modest conclusion to their hypothesis: these experiences can influence an *intention* to act. These increased intentions were most aligned with responses that included sadness, helplessness and anger, and Sommer et al. suggest that artists should not shy away from triggering such emotions. They also conclude that:

For artists, this means that the art experience alone cannot be expected to make people change their behaviour, but that other measures helping people act upon their intentions need to be implemented after the art experience (Sommer et al., 2019, p.9).

The researchers extend their gaze beyond the artwork itself and begin to consider how it may sit amongst a broader set of measures. Again, the researchers stress the importance of exhibiting work outside of traditional art settings.

All four of the studies considered in this final section offer valuable (and rare) insight into direct audience experience with Anthropocene art. Their contribution adds important texture to our understanding of how creative work engaging with themes of the Anthropocene are received and understood by audiences and thus, to an extent, how they operate within a broader social system. A lacuna remains however as a result of the methodologies that these studies choose to employ, which to varied extents constrain the possible responses of an audience. To establish a baseline for the *Pollution Pods* study, visitors were first asked about their intentions to act on climate change, perhaps colouring the experience from the outset. Emotional responses to the *Anthropocene* exhibition at the Art Gallery of Ontario were limited to seven possible options, a practical design choice that severely restricts insight into the vast array of feelings that this experience may stir up. As Galafassi and Kagan et al. (2018) point out, social science tools and methodologies are challenged by multifaceted effects of the arts.

3.4 Conclusion

This chapter has examined scholarly considerations of what art may offer in the time of the Anthropocene. Many scholars suggest that amidst the Anthropocene art may aid a renewed understanding of our place in the world, presenting extended perspectives, exposing paradoxes and illuminating our entanglement with the rest of the natural world. There remains some dissensus, though, as to whether this is achieved most effectively through content or form of an artwork. It is argued by some that art plays an important role in collapsing distances of time and space, offering us direct sensory experience of Anthropocene phenomena that resist human perception.

The literature reviewed here also suggests that art may offer us ways forward through the Anthropocene. It can function as a site of experimentation free of the demand for outcomes, challenge accepted categories of knowledge and invite us into community. Significant disagreement exists about the extent to which art should offer solutions to Anthropocene challenges, or encourage a critical gaze. Some scholars, in particular those who explore audience experience, make explicit recommendations to enhance the resonance and reach of Anthropocene art. These include layering different ways of knowing, moving creative work out of traditional spaces of art engagement and acknowledging the broader context that experiences with works of Anthropocene art sit within.

My study contributes to this collection of recommendations by extending our exploration into experiences with interactive Anthropocene art. By considering three very different creative works, and adopting an open approach to gathering insight into

audience experience, I hope to further our understanding of how art may aid our navigation of the Anthropocene. In the next chapter, I outline the methodological approach I adopted for this research, and detail the methods used for gathering empirical materials that I go on to analyse in subsequent chapters.

Chapter 4 Research methodology

In this chapter I outline the methodological approach adopted for this research, and present the methods used. I begin by outlining my ontological and epistemological position, establishing the backdrop against which I embarked on this research journey. I then move on to discuss intuitive inquiry as a methodological framework for the use of mixed methods and draw out aspects of the approach pertinent to my project. I offer a sketch of how the arcs and cycles of this approach operate to transform the lenses through which empirical materials are considered. I share the details of a pilot study before describing the research design and methods employed in this present endeavour, introducing the case studies I focused on, the process of participant recruitment and the way in which I conducted interviews with these participants. I describe my approach to analysing the empirical materials gathered and finally reflect on the reliability and applicability of the study I have conducted.

4.1 Locating the researcher

Though methodological design is inherently bound up with theoretical assumptions, I harbour a reluctance to situate myself within a single research paradigm. Whilst the concept of paradigms may be useful in locating my work within a certain context, these categories place limits on the position a researcher can occupy. As Manning (2016, p.32, emphasis in original) suggests, the act of research itself, in the accumulation and reorientation of knowledge, has a bearing on the approach to that research and “a standardized methodological approach begins to unravel if we ask not how knowledge can be organized, but what knowledge *does*.” Consideration of the nature of being and knowledge is not an exercise that can be hurried, or simplified, and is perhaps one that can never be, or *should* never be, complete. Moreover, these ontological and epistemological categorisations are themselves broad, ambiguous, and often contested; all are “human constructions, and hence subject to all the errors and foibles that inevitably accompany human endeavors” (Guba, 1990, p.19). However, in order to provide an appropriate context for the reader, and to establish a grounding for myself as a researcher, I have sketched out my current ontological and epistemological positioning.

Ontologically and epistemologically, I align with a critical realist stance: though there exists a reality that operates independently of our awareness and knowledge of it, there is no *objective* way of knowing this reality. Interpretations of reality are multiple, though each legitimate in their construction, mediated through a complexity of lenses or

frames that are continually reconfigured and reshaped by my experiences and shifting context (Sayer, 2000). As the configuration of my experience is unique to me, the lenses or frames through which I understand the world will differ from that of any other individual, to greater and lesser degrees. Our knowledge of it is always culturally, socially and historically situated. Objectivity, though portrayed as a positionless perspective, is in essence the privileging of knowledge from a particular perspective, reflecting the identity of the historically dominant knowledge-makers and paradigm-imposers. On exposing this myth of objectivity that has pervaded the western sciences, Haraway (1988) proposes an alternative feminist 'objectivity' of situated knowledge, grounded within a particular culture, time, personal experience, and social dynamic, that resists closure and finality.

Acknowledging the myth of objectivity and the positioned nature of perspectives raises questions about the relevance and validity of my research, and the extent to which I can make claims to knowledge. If we concede that all knowledge is situated, what can we hope to achieve through the process of research? If this research is essentially my interpretation of an other's interpretation (that of a research participant), what epistemic value can it hold? If I interpret the world from a particularly situated position, how can I hope to faithfully interpret the point of view of an other? Such questions loom large against a background of traditional research practice where "objectivity and truth are often almost collapsible terms, enforcing the enduring and powerful view that for research to have any validity or truth value, it must remain objective and free of bias and researcher values" (Davies and Dodd, 2002, p.283).

Importantly, Haraway (1988, p.584) exposes the problematic nature of both a totalisation of objectivity (claiming a universally valid knowledge) *and* of relativism (truth is *always* relative): they share a common neglect of embodiment, location, and partial perspective, "promising vision from everywhere and nowhere equally and fully". Rejecting these problematic absolutes, she proposes "partial, locatable, critical knowledges" (Haraway, 1988, p.584) that though not impartial, disinterested, or value-free, may be able to provide richer accounts of the world. Yet, as she outlines, the challenge is:

How to have simultaneously an account of radical historical contingency for all knowledge claims and knowing subjects, a critical practice for recognizing our own 'semiotic technologies' for making meanings, and a no-nonsense commitment to faithful accounts of a 'real' world, one that can be partially shared and that is friendly to earthwide projects of finite freedom, adequate material abundance, modest meaning in suffering, and limited happiness (Haraway, 1988, p.579).

Navigating this space between steadfast singularity and perpetual ambiguity, between the everywhere and the nowhere, demands a deliberate and considered, yet sensitive,

research approach. It requires the negotiation of what could be considered a kaleidoscopic composition: the process of research itself acts upon the researcher (as research tool) and the research materials in various ways, functioning as a series of intersecting mutable components. The result is an acknowledgement that attention must be given to liveness as a feature within the research process.

Lenses or frames of perspective, crafted and recrafted by our experiences, not only influence *what* we perceive, but what we *can* perceive. Each element of my experience in the world acts upon the lenses through which I make meaning. Some experiences may make little impression, or reinforce an existing configuration, whilst other interactions may be dismissed as incompatible or unhelpful for my understanding and navigation of the world. Equally, the acquisition of new information, or the realignment of knowledge already held, may enable us to perceive things that previously escaped our attention, as “underemphasized features, patterns, opportunities, and resources come to light” (Elgin, 2002, p.13). The process of research itself, through exposure to new insight, reconsideration at alternative levels of focus, and engaging with diverse interpretations, regularly prompts adjustments in the way I relate to, and understand, the world. An acknowledgement of this entanglement – a researcher is transformed through the process of research, and thus there is a liveness to the knowledge developed – underpins the approach of intuitive inquiry, which I outline in the following section of this discussion.

4.2 Methodological approach

Before embarking on this study, I explored a breadth of methodologies, wrestling with which approach would best fit the research questions I posed. In a Goldilocks-like fashion, those I considered initially never seemed quite right. They either offered too little room for participant expression (as in the case of Q methodology) or anticipated too significant an embeddedness of the researcher (as with focused ethnography). I will not attempt to further detail the reasons why each of these were not employed here, but instead offer an explanation as to why I settled on intuitive inquiry as the methodology of choice.

Intuitive inquiry was developed by Rosemarie Anderson in 1998, influenced by traditions of philosophical hermeneutics and embodied phenomenology. It is founded on the understanding that interpretation is “personal and cyclical rather than linear and procedural” (Anderson and Braud, 2011, p.6), offering a framework for drawing on the most appropriate methodological tools, with an acknowledgement that research is a living, dynamic process. In the case of intuitive inquiry, intuition is understood to

include forms of intuitive insight such as novel ideas and thoughts, as well as insight from nonrational processes, kinaesthetic impressions and meditative contemplation (Anderson, 2000). This methodological approach accommodates my critical realist position, embracing the situated nature of research. Below I draw out aspects of this methodology that are particularly pertinent to this study, before discussing the arcs and cycles that it entails.

4.2.1 Researcher at the centre of the process

This methodological approach emerged from the field of transpersonal research, where research topics often evolve from a researcher's life experience. My doctoral research is a culmination of two previous career paths: arts production and sustainability consultancy. I spent two years managing circus and theatre productions, before an about-turn move into advising corporations on sustainability strategies. This research is firmly rooted in my personal interests and history, and any attempt to extricate myself from the process would be futile. Intuitive inquiry embraces this intimacy between researcher and research topic, and consciously positions the researcher and their experience at the core of the endeavour (Anderson, 2000). Indeed, this intimacy is not only embraced, but actively encouraged. As Anderson (2000, n.p.) makes clear:

Intuitive inquiry openly invites the researcher to structure the research method, procedures, setting and context to maximise (rather than minimise) the very gateway through which the researcher understands or is inspired by the experience studied.

Rather than side-lining personal values and initial assumptions, these values and assumptions form the initial lenses used to begin the interpretive cycles of analysis (Anderson, 2000), outlined in more detail below.

Though as researchers “we are often trained to hide our relationship to our work” (Leavy, 2009, p.2), the process of inquiry involves a continual dynamic interplay between research and personal growth. A correlating development of the researcher will lead to an evolution of practice, eliciting deeper insights, establishing a virtuous circle:

The states of being that develop in one area allow particular types of knowing to occur in other areas, and sensitivities mold being and being molds sensitivities in an endless cocreative, dialogical dance (Braud and Anderson, 1998, p.22).

It is important that I allow my research to “be rigorous, theoretical, and analytical *and* emotional, therapeutic, and inclusive of personal and social phenomena” (Ellis et al., 2011, p. 283, emphasis in original). In fact, intuitive inquiry seeks to transform a

researchers understanding of a topic and “support breakthrough insights” (Anderson, 2019, p.312).

4.2.2 A focus on human experience

Intuitive inquiry was borne out of a desire for a methodology that encouraged a more inclusive and connected approach to the study of human experience (Anderson, 2000). The more subtle dimensions of human experience, Anderson (2000) suggests, elude our reductionist research approaches. As “the potential of the arts [lies] in the open-ended and disruptive character of the experiences they trigger” (Crossick and Kaszynska, 2016, p.65), study of these experiences presents significant research challenges, resisting pre-defined categories and limitations. Intuitive inquiry is an attempt to avoid restrictive descriptions of human experience, by inviting the employment of a large and varied toolbox. As I suggested in Chapter 3, exploring audience experience with approaches such as a Q-methodology narrows the scope of insight to a handful of statements which, whilst it may accommodate a more extensive sample size, risks missing the subtleties of joy, fear, perplexity and resonance (for example) which might fall between the gaps. I chose to conduct interviews that were informal and conversational rather than heavily structured and interrogatory. In line with an intuitive inquiry approach, I employed a guiding set of questions but no strict order for asking or lengthy list to complete, leaving space for the character of the experience to unfold through the meandering of conversation.

This raises questions of what constitutes an ‘experience’ of engaging with art. Is the experience that I seek to examine confined to immediate and unadulterated response, prior to any reflective process? It is a legitimate contention that reflection on an experience involves an alteration of what was experienced in the moment itself. Indeed, we may conclude that access to the immediate experience of another, and even of ourselves, is an impossibility. As Reason (2010, p.21) argues, “reflective consciousness in and of the moment ... radically transforms that moment into something other.” However, expanding the conception of experience to encompass this reflective consciousness begins to paint a more complex picture of engagements with art, comprising of multiple connected facets of a larger, and perhaps enduring, never finished, whole. Experience then becomes “something actively constructed by individuals in negotiation and in relation to their sense of selves, of others and of the world around them” (Reason, 2010, p.24).

As such, another methodological challenge lies in ensuring participants go beyond evaluations of the artwork. Sedgman (2017, p.314) suggests this can be addressed by “encouraging them to speak about what it did to them in the moment, as well as what they have done with the experience since”. Rather than ask participants ‘What did you

think about the work?’ – though in some cases this was the question that was answered – I opened conversations with: ‘Tell me about your experience with [relevant artwork].’

This was a deliberate attempt to get into the gaps between the questions that may appear on an audience survey or questionnaire, rather than being guided by a structured set of questions that leads the participant to focus on predetermined aspects of the work or their encounter with it. The informality of these interviews made them more akin to conversations, thus I use the term ‘research conversations’ in my case study chapters.

The responses to this opening request were often rich, though further questions were posed to elicit extended description, request clarification, or encourage a focus on felt experience (rather than appraisal and evaluation). I noted threads pertinent to my research questions, and returned to them later in the conversation. These conversations were conducted at a time convenient for the participant, in person where possible, or on skype or the telephone. Conversations were recorded for subsequent transcription.

I designed a longitudinal dimension into the studies of *Coral Empathy Device* (Austen, 2017) and *Deep Time Walk* (Deep Time Walk C.I.C, 2016): additional conversations were requested after a period of one month and six months following the initial conversation to explore how memories and meanings may have altered over time. However, securing time with participants months after an initial conversation proved challenging – I garnered only a small proportion of second interviews (a number were offered as written responses) – so this longitudinal aspect is somewhat lacking in the analysis presented here.

On the basis of my ontological and epistemological positioning, I consider it important to place emphasis on the lived experience of the participants in this study, as directly as possible. The methodological choices made here are an attempt to acknowledge the position of the participant at the centre of their experience, and as authors of experiential accounts. As such, I quote directly and extensively from my conversations with participants, to portray their unique voices and experience. It is important to stress however that this focus on the participant experience does not preclude the presence of the researcher at the centre of the inquiry.

4.3 Arcs and cycles of intuitive inquiry

Intuitive inquiry is comprised of both a forward and a return arc, each of which involves a series of interpretive cycles. The forward arc clarifies the research topic (Cycle 1) and “articulates the scholar’s preunderstanding of the topic prior to active interpretative engagement with new resources” (Anderson, 2019, p.314). It sets out the initial lenses through which the topic is approached prior to the creation and assembling of new

empirical materials (Cycle 2). The return arc is a “process of transforming the preunderstanding via the understandings of others” (Anderson, 2019, p.315). This latter stage encompasses the assembling and analysis of original empirical materials (Cycle 3), the refining of interpretive lenses (Cycle 4), and a discussion of associated theoretical implications (Cycle 5). With these arcs and cycles, intuitive inquiry is an iterative process that allowed me to remain open to shifts in understanding. To fully document every part of such a process would overwhelm the thesis: if I were to detail all the half turns and double backs and points of pondering, I would still be writing now. Instead, here I have highlighted some important steps and key moments in that journey.

4.3.1 Early lens adjustment

The forward arc of this research venture was itself a process of refining initial lenses through which to approach the case studies and associated assembly of empirical material. I began this PhD journey motivated by a deep conviction that the arts had a role to play in realising a sustainable future. I was drawn towards ideas of worldview transformation triggered by experiences with art, and my early reading and initial writing was focused on shaping these lenses. I drew on psychological theory and theories of personal epiphanies, tracing the idea of sudden worldview shifts and stark realisations through singular encounters. However, through conversations at and following my Transfer meeting, with my supervisory team and others, these lenses were gradually adjusted. I stepped away from the notion of worldview transformation and instead engaged with a broader scope of the different ways of knowing that are offered through experiences with art.

4.3.2 Assembling and working with empirical materials

The initial cycle of the return arc involves the assembly and analysis of empirical materials. For this research, these materials were assembled through conversations with participants who had engaged with one of the case study artworks. All interviews were recorded (with participant permission) and subsequently transcribed. The transcription process, whilst protracted, was an essential act of immersion in the richness of the material. I became intimately familiar with the conversations: pausing, rewinding and listening again to catch the precise order of words. “Transcription might be laborious”, Denscombe (2014, p.278) acknowledges, “but it is also a very valuable part of the research because it brings the researcher ‘close to the data.’” I refrained from noting themes initially -- though inevitably some passages began to stand out -- instead

maintaining focus on accurately transposing the audio to text. This was a process of noticing and of letting ideas simmer, rise to the top and perhaps fall away.

When I did move on to document the themes, I used a coding process in NVivo: reading through each interview, marking phrases that felt significant with regard to my research questions. Sometimes these were themes that had emerged through the transcription process, sometimes they were freshly recognised. I did not restrict the number of themes I identified at this point, and the list became quite extensive. The logician in me was attracted to using this software, with its appearance of professional rigour. However, after some time I found that it added little to my process of analysis and sat slightly at odds with the more fluid approach I had adopted for this study. After an initial coding process, I returned to other ways of working with the materials: I extracted the documents from the software and began to work on printed copies: rereading, highlighting passages, scribbling notes. Shifting modes of interaction – moving between auditory, digital, and working more materially – offered different ways into the texts.

Characteristic of intuitive inquiry, the analysis process was not linear: it involved many reflective pauses and repeating loops. Identified themes were refined, paring down the list to those that resonate most with the inquiry. I continued writing around these core themes, drawing on theory, and reviewing alongside relevant documentary materials. As I drew on aspects of the interviews that were most illuminating with regards to my research questions, not all participants are represented equally in the extracts that I share through later chapters. Transcript quotes included in these narratives were edited to remove hesitations (ums, errs, etc.) but are otherwise presented verbatim in the case study chapters.

4.3.3 Refining lenses

Beginning from the initial assumptions of the researcher, each cycle of assembly, analysis, and descriptive findings adjust the lenses through which the materials are considered. My research journey was peppered with moments of what Braud and Anderson (1998) refer to as ‘auspicious bewilderment’, which signals the beginning of renewed understanding. Immersing myself in the materials from my first case study (the *Coral Empathy Device*) I was quickly stuck by the struggles that many participants had in engaging with the work. The initial lenses I used to approach this fieldwork were focused on the different ways of knowing that Anthropocene art might offer, with a latent assumption that there would be no barriers to access. Initially, I felt challenged by this finding, concerned that this signalled a failure on my part as a researcher, worried that this unanticipated insight would undermine the study. However, intuitive inquiry encourages the researcher to meet these moments with curiosity and to embrace the

transformation of understandings. To inform this lens adjustment, I turned to appropriate literature, that then informed further descriptive analysis of the conversation texts.

As I focused on the case studies consecutively, I approached each with renewed understanding, shaped by insights gathered from working with previous empirical materials. Accessibility of the work was part of the frame through which I approached the second case study, the *Deep Time Walk*. Associated empirical materials here again encouraged me to go back into exploring the literature, exploring the gap between expectations of creators and actions of audiences. My understanding of experiences with art had developed considerably by the time I engaged with my third case study, the *Time and Tide Bell* (Vergette, 2007), which was again transformed, consolidating and reorienting newly acquired insights. The cycles of interpretation involved in intuitive inquiry mean that, in light of emergent findings, earlier understandings can become unpicked, or revised. These cycles, and the accompanying reassessments, make up what Hunter et al. (2002) refer to as the ‘intellectual chaos’ phase.

4.3.4 Discussion and theoretical implications

Having garnered pertinent themes from participant conversations (discussed at length in Chapter 5, Chapter 6, and Chapter 7), I spent time working with the themes from all three case studies, mapping similarities and differences, subtleties and nuances, in light of my initial research questions. Whilst some discussion points emerged quickly, others took more time, becoming evident only after considerable periods of drafting, redrafting, and reflection. Though Chapter 8 offers a clear narrative, the process of refining the points of value was far from linear, involving a back and forth between the case study themes and, even at this point, additional literature.

Overall, the process and practices on intuitive inquiry offered me a way to work flexibly and responsively with participants and empirical materials, to revisit and rethink the knowledge that emerged, and to bring the empirical and theoretical into productive conversation.

4.4 Research design

This research is centred on a series of case studies, examining specific instances of audiences engaging with Anthropocene artwork to elicit a focused, in-depth picture. This strategy allows for a holistic consideration of each case, offering a rich picture of engagements with three particular works of art. Denscombe (2014, p.54) outlines that in

case study research “the aim is to illuminate the general by looking at the particular.” The pertinent word here is ‘illuminate’ – I do not propose that these cases are able to represent the broader set of audiences engaging with Anthropocene artwork, or even various audiences of these particular cases, but my ambition is to provide some texture to the research area through detailed description and exploration. Examining the structure and dynamics of these three cases may offer insights to draw upon when developing theory applicable to the broader field.

4.4.1 Pilot study

To develop my approach to assembling empirical materials, I established an early pilot study in June 2017. This focussed on Daniel Gosling’s *Carbon Capture* (2017), an installation exhibited as part of the *2 Degrees* festival of arts and climate change.

Carbon Capture was described as follows:

Bring a strong bag, take away as much anthracite as you want, bury it somewhere.

In the mid 18th century, just prior to the First Industrial Revolution, the global atmospheric CO₂ level was 280 parts per million by volume. On our current global emissions path, before the end of this century it’s set to have doubled to 560. At that point it’s anticipated that the global atmospheric temperature will have risen by a minimum of 2°C against that of the mid 18th century, though the increase could be significantly greater.

Enter a space. Hear the sound of a piano playing live. You are faced with several tonnes of anthracite coal, representing all fossil fuels. As the carbon in coal only impacts the climate if burned, we invite you to take as much as you can carry (or just one piece) then bury it somewhere (Artsadmin, 2017).

The work comprised two large piles of coal in an empty retail space in the Brick Lane area of London. Paper bags and gloves were provided for visitors to collect and take away any amount of coal they wished. The installation was accompanied by a musical exposition, crafted using sets of numbers representing average global atmospheric carbon dioxide levels, performed on an out-of-tune, computer-controlled upright piano.

The *2 Degrees* festival was ideally timed for me to conduct a pilot study, so I had made the decision to focus on a work in the programme. A conversation with the festival producer some time in advance gave me insight into several of the works that would be featured, and I settled on studying Gosling’s piece before it had even been installed. I was interested in this work for several reasons: its accessibility and opportunity for ‘happening upon’, its openness to interpretation, and the invitation for involved action. Minimal contextual information within the installation created space for individual interpretation and avoided overtly moralising intention. I was drawn to the scope that

this allowed for different understandings of the work, and the possibility for a variety of experiences. The invitation to interact with the work, to take part of the installation away and place it elsewhere, encouraged a physical interaction with the installation that continued beyond the space itself. This had potential to elicit engagement at a deeper level, as visitors, if they chose, had to engage in an intentional performative act.

Over the two days of my attendance at the installation, it was visited by just under one thousand people. On the second day of observation I took the opportunity to approach visitors as they left the installation to enquire if they would be willing to participate in my research, involving a conversation a few weeks hence. If they agreed, I noted their email address. My reasons for waiting some time before discussing the installation with visitors was threefold. Firstly, as what may be considered an abstract installation – little explanation was provided in context – I felt that some time for reflection would be beneficial. To ask a visitor about their experience as they leave may have elicited a confused or superficial response. Secondly, I wanted to allow for any potential discussions about the installation to occur so I could explore this dimension through my questioning. Thirdly, I was interested in exploring time as a dimension of experience with art.

Approximately four weeks after my time at the installation I contacted those visitors who had agreed to participate in this study. Of thirteen individuals contacted, I was able to successfully schedule conversations with just two: for the remainder, emails either went unanswered, or invitations to discuss the experience were declined. The conversations were short and informal: beginning with inquiry as to whether they took any coal, I followed this strand of narrative and asked them to tell the story of their encounter with the work, their perceptions and reflections in the aftermath. Themes of entitlement and the significance of a performative act were the most prominent.

Attempting to arrange conversations with visitors several weeks after the installation was challenging. When I did manage to schedule conversations, these were conducted on the telephone, thus denying the development of a constructive relationship between researcher and participant. Thus I made the decision that engagement with participants of future research would be in person wherever possible (and appropriate) and at a time that ensured full investment from the participants. I also realised that longer conversations and further questioning would also be beneficial to reaching the depth of insight required for understanding the many dimensions of experiences with art. These insights helped to inform the research design and choice of methods employed in the main investigation of this thesis.

4.4.2 Case study selection

I chose to explore artistic works located in the United Kingdom, aligning with a familiarity of the local environmental art sector I had built up over a number of years. This geographical focus also limited the amount of extended travel required and would enable me to conduct face to face interviews. I maintained a view of the broader international context (though predominantly focused on the anglophone developed nations) throughout the course of this study: the volume of materials online allows a considerable grasp of the landscape without closing the physical distance. Early in my doctoral study I approached several practitioners and was in extended discussion with Metis Arts about featuring their production *We Know Not What We May Be* (2018) as a research case. This work was programmed as part of the Barbican's autumn 2018 season, 'The Art of Change.' I spent considerable energy planning for this research scenario and had considered my search for case studies to be complete. I was caught slightly unawares when these plans did not come to fruition as what had been quite a constructive dialogue became stilted and then ceased altogether, effectively closing off this avenue of possibility.

My search for an alternative case study led me initially to the *Coral Empathy Device* (Austen, 2016), a mixed media interactive sound sculpture crafted to be worn over the head of a single audience member. This work satisfied two primary criteria of engaging with ideas of the Anthropocene and involving an interactive dimension. The *Coral Empathy Device* offers an audience an interpretation of the aural and haptic experience of a coral in an attempt to engender empathy with a species affected by anthropogenic effects on the environment (Austen, 2016). A personal and institutional connection with artist Kat Austen (explained further in Chapter 5) provided a fortuitous opportunity to programme an installation of the *Coral Empathy Device* at a Leeds gallery space in June 2018 and to feature it within this research project.

Though my original intention was to focus on a single case, as the Metis Arts production was extensive in scope and duration, the more contained nature of the *Coral Empathy Device* study offered me the opportunity to examine multiple cases. The second case study I selected was the *Deep Time Walk* (Deep Time Walk CIC, 2016), a mobile app that offers a dramatised narration of deep time as the listener walks a distance of 4.6 kilometres. The team that conceived and developed the *Deep Time Walk* contend that an affective grasp of humanity's place within the Earth's history will evoke a profound shift in perspective that they consider necessary to address the challenges of the Anthropocene. The *Deep Time Walk* was particularly accessible for research as participants were able to download the app onto their own device and walk in a location of their own choosing.

Reflecting on the material gathered in these first two case studies, I decided that a third would add worthwhile depth to this research project. The *Time and Tide Bell* (Vergette, 2007) comprises a series of bronze sculptural bells positioned around the UK coastline which are rung by the action of the high tide. The harmonies of the *Time and Tide Bell* reflect the entanglement of sea and the human species, and its permanent positioning becomes a marker for sea level rise. My pre-existing acquaintance with the director of the newly (in 2017) established Time and Tide Bell Organisation enabled access to key community contacts at a number of the bell sites. I focused on the bells located in Cemaes, Mablethorpe and Morecambe. With this case, the notion of interactivity takes on a participatory quality as the installation of a bell is secured through a collaboration between the artist (and the Time and Tide Bell Organisation) and the local community, the latter of which eventually takes ownership of the work. This variation offered a chance to add additional layers of inquiry to the research project.

These three works share common ground that is useful to delineate here, illustrating their suitability for this study. All three showcase the characteristics of Anthropocene art that were set out in Chapter 3. They focus on the nature and scale of humanity's fingerprint on the planet, and each foregrounds the relationship between human and environment, and human and non-human: the *Coral Empathy Device* by offering the perspective of a species impacted by this fingerprint; the *Deep Time Walk* through an illumination of the extensive planetary history of which humanity is part; and the *Time and Tide Bell* as a result of intervening in the landscape. All three gesture towards the paradox of the Anthropocene: the *Coral Empathy Device* through an illumination of human-caused harm, whilst demonstrating the struggle of our endeavours to understand the experience of another species; the *Deep Time Walk* by underscoring the fleeting appearance of the human species within the vast stretch of deep time; and the *Time and Tide Bell* with its human-made object that will endure in the landscape, marking the rising sea levels that will determine the edges of our settlements. Each piece leaves an audience with questions to reflect upon.

Though these case studies each approach the Anthropocene along different lines of connection – species, temporality, landscape – all three employ a sensory dimension. Various pairings amongst the three hold in common themes of place (*Deep Time Walk* and *Time and Tide Bell*), temporality (*Deep Time Walk* and *Time and Tide Bell*), and interactions between the human and nonhuman (*Coral Empathy Device* and *Deep Time Walk*). In particular, they all feature a significant sonic aspect, each case study working with sound in their explorations of the Anthropocene. Sonic engagement with the Anthropocene, suggests Kanngieser (2015, p.81), “brings into the world novel relations, it shifts paradigms and builds new formations.” The soundscape of the *Coral Empathy Device* offers an aural translation of coral distress, the audio narrative of the *Deep Time*

Walk matches a temporal scale onto a cadence of physical movement, and the melodic chimes of the *Time and Tide Bell* mark both the daily movement of the tides and the slower, more subtle creep of the sea level. Though there has not been space in this thesis to fully explore this uniting thread, it would indeed provide an interesting area for future research. Further detail about each case study is offered in the respective chapters (Chapter 5, Chapter 6, and Chapter 7).

4.4.3 Research participants and empirical materials

Participants in this study are individuals who have experienced or are involved with these case study artworks. The *Coral Empathy Device* installation was advertised across the University of Leeds campus (Figure 4.1), on social media, and as part of the *Season for Change*¹⁰ programme. I approached visitors to the installation after their encounter with the work to request their involvement in the research project. If they were willing to participate, I recorded their contact details and was in touch shortly after their visit to arrange an interview time. In a few instances, when the installation space was quiet, I conducted the initial interview in the gallery space itself immediately after the participant had interacted with the work.

In the case of the *Deep Time Walk* I issued a specific call for research participants. Again, this was put out across the University of Leeds (Figure 4.1), on social media and as part of *Season for Change*. Individuals contacted me to express interest and I provided them with further information, including the link to the *Deep Time Walk*, encouraging them to use the app at a time that suited them. I followed up with these individuals to ascertain whether they had completed the walk and arranged interview times with those who had.

¹⁰ *Season for Change* is a nationwide festival of artistic work celebrating the environment and inspiring action. In 2018 it ran from 1 June until 16 December.

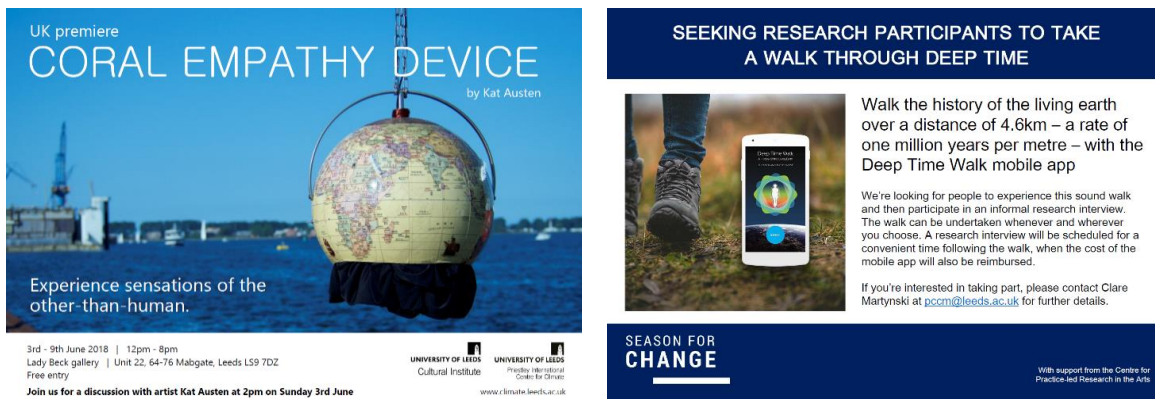


Figure 4.1: Posters for the *Coral Empathy Device* exhibition and the *Deep Time Walk* research call. These were displayed across the University of Leeds campus.

I considered it important for this research that the audiences were made up of self-selecting individuals who chose to encounter these artworks. Seeking out participants who would be unlikely to attend this type of exhibition or take the time to experience a sound walk (through deliberate invitation or incentive) would have introduced an element of artifice, limiting the extent to which we may be able to draw out insights that ‘illuminate’ the broader field. Despite an early intention to collect detailed demographic information, I came to decide that as my focus was on exploring the breadth and richness of experiences with art, this was unnecessary. I wanted to address individual experiences as authentic in themselves rather than pin them to a particular set of sociodemographic characteristics. However, I have offered a broad indication of the demographics of participants in Table 4.1.

As with my choice of case studies, the individuals who engaged with these works were mediated by a set of existing relationships. Many of the participants were personal connections, or only a few steps removed: aligned with my circles of interest through social media or the websites used for promotion, or affiliated with the University of Leeds. It could be suggested that such skewing of the audience may invalidate this research in some way. However, this promotion through a web of relationships is a realistic dimension of smaller-scale art initiatives. Details of events and exhibitions are shared through recommendations from friends and acquaintances, a social media post from a (virtual) contact.

Participants for the *Time and Tide Bell* case study were individuals associated with the bell project: community members involved in securing the bell installations at Cemaes, Morecambe, and Mablethorpe. I also planned to engage with passers-by, locating myself near the sculpture, and approaching individuals that paused at the sculpture to request an interview. However, it soon became obvious that this was going to generate

little useable material: the footfall was extremely low at all three sites I visited; individuals were mostly reluctant to stop and chat; and the wind in Morecambe was so strong that the few short interviews I did record were inaudible. Thus, for this case study I draw very little on interaction with passers-by and instead focus on material generated through conversations with aforementioned community members.

To develop a rich picture, in all three cases I interviewed the artist, producer and, in the case of the *Time and Tide Bell*, the project education coordinator. I also gathered relevant documents through desk research, including reviews, mission statements and so on, drawing on these for context. Table 4.1 below indicates the empirical materials collected for each case.

Table 4.1: Empirical materials related to each case study

| Case study | Participant interviews | Other interviews | Documentation |
|-----------------------------|--|---|---|
| <i>Coral Empathy Device</i> | 14 Between 20 and 50 years old; 8 female, 6 male; 12 British, 1 Mexican, 1 Colombian. | 1 Artist | Two journal papers authored by the artist Web page for the work |
| <i>Deep Time Walk</i> | 14 Between 25 and 70 years old; 10 female, 4 male; all British. | 2 Executive Director Art lead | Project website and social media pages App store reviews |
| <i>Time and Tide Bell</i> | 5 Between 30 and 70 years old; 3 female, 2 male; all British. | 5 Producer Artist Education coordinator Community leads | Project website and social media pages Community-level project web pages Leaflet produced at Cemaes Bay |

4.4.4 Research ethics

Institutional ethical approval was sought and granted before the commencement of fieldwork. All participants were provided with an information sheet outlining the purpose and intended use of this research and asked to consent to involvement before interviews were conducted. All participants granted permission for their interview to be recorded. Interviews and subsequent transcriptions were allocated a reference code to enable documents to be stored anonymously. In the case of the *Deep Time Walk* and *Coral Empathy Device*, pseudonyms have been used when referring to participants interviewed. In the case of the *Time and Tide Bell*, where all participants are intimately tied to the ongoing projects and thus readily identifiable through publicly available information, and have agreed to be named in my thesis, pseudonyms have not been used.

Contact details were maintained to allow for a longitudinal dimension to the study. These details were stored separately to any interview transcriptions. Research data and signed consent forms have been retained electronically, saved on the appropriate encrypted University drive.

4.5 Reliability and applicability

I took steps to ensure this study will add value to the field of research. Though research cannot be impartial, disinterested, or value free, that does not diminish the value of the insights it can offer (Davies and Dodd, 2002). Rather than establishing reliability through replicability, in qualitative research reliability is based on:

Consistency and care in the application of research practices, which are reflected in the visibility of research practices, and a reliability in our analysis and conclusions, reflected in an open account that remains mindful of partiality and limits of our research findings (Davies and Dodd, 2002, p.280).

Partial perspectives are inherent in situated knowledges, and this study is no different. My intended transparency regarding the research process should go some way to uncovering how I have gathered the insights presented later in this thesis.

As much of this study focused on interviews, I could begin to interrogate the ‘trustworthiness’ of participant accounts. How can we validate the reports of these individuals? Yet this is a fruitless inquiry. As Csikszentmihalyi and Robinson (1990, p.xiii) articulate, “experiences are subjective phenomena and therefore cannot be externally verified. Either one trusts the words of the person who reports the experience

or one does not.” For this research to function at all, the word of the participant must be treated as entirely valid.

This said, I am not suggesting that the applicability of this research is without limitations. As with any methodological choices, those that I have made here impose various limits on the type and applicability of the knowledge I can garner through this research study. Focus on the experience of participants, and how they understand such experience, results in necessarily subjective research findings, gathered through qualitative methods. The multiplicity of human experience does not lend itself to objective assertions. My intention here has been to explore the richness of experience and delve into the subjectivity of each encounter. Though I draw out broad themes, these are intended as particular insights rather than general representations. I hope that these insights may further our understanding of experiences with Anthropocene art.

4.6 Conclusion

In this chapter I have offered an overview of how I went about conducting the research that this thesis presents. I have demonstrated how intuitive inquiry fits appropriately with critical realism, and is an apposite approach for gathering rich, authentic audience insight. In doing so, I have laid a foundation for the remainder of the research discussion that is centred on an acknowledgement that objectivity is not possible, but that there is a validity to and value in multiple interpretations. I highlighted my pilot study examining *Carbon Capture* (Gosling 2017) and outlined how this further informed my approach to the three case studies. Following a presentation of mixed methods I employed to gather and work with empirical materials, I briefly considered the reliability of this study and the extent to which it may be more broadly applicable.

The three chapters that follow present each case study of this research: the *Coral Empathy Device* (Austen, 2016), the *Deep Time Walk* (Deep Time Walk CIC, 2016), and the *Time and Tide Bell* (Vergette, 2007). In each, I describe the artwork itself, examine its Anthropocene links, contextualise the work within a broader set of creative endeavours, present my own encounter with the work, and then draw out key themes from the research conversations I had with participants.

Chapter 5 Interspecies encounters of the Anthropocene: a study of the *Coral Empathy Device*

The first case study of this doctoral research is Kat Austen's *Coral Empathy Device* (2016). I begin this chapter with an overview of the artwork, introducing its conceptual basis, physical form, and interactive dimensions. I then locate it within a context of creative endeavours to which it is connected along different axes. Following details of the exhibition at which I conducted my study, I provide an account of my own encounter with the artwork before moving into the specifics of my enquiry and exploring the themes that emerged. These include ideas and reflections that arose for participants, as well as aspects of the work that I suggest may have enabled or hindered engagement in different ways.

5.1 The *Coral Empathy Device*

The *Coral Empathy Device* (Austen, 2016) is a mixed media interactive sound installation; a sculpture crafted to be worn over the head, one individual at a time (Figure 5.1). The globe-like form hangs suspended by a single metal chain above a white stool. From the base of the globe, which has been cut shy of its full spherical shape, hangs a curtain of black material, not unlike the skirt of a cuttlefish, or as if some internal matter is emerging from within the hollow. An antique-style map covers its surface, as if it was once a complete model of the Earth but has been hacked along a southern latitude. Dotted across the map are collections of small white protrusions: these are 3D printed miniature coral reefs, set at points on the globe corresponding to locations of the largest reef structures in the world.

The idea for the *Coral Empathy Device* originated at a workshop in Bergen, Norway, where artist Kat Austen was employing DIY methods to detect microplastics in the waters of a local fjord as part of a broader exploration into the impacts of human activity on coral. As well as researching microplastics in marine environments, Austen's research considered issues of sound pollution and ocean acidification.¹¹ This echoed Austen's longstanding interest in water and environmental issues: her doctorate in chemistry examined pollution at the surfaces of carbonate minerals, involving surface-

¹¹ Ocean acidification occurs due to an increased concentration of carbon dioxide dissolved in sea water which lowers the pH level. This raised acidity threatens an array of marine ecosystems (Doney et al., 2009).

liquid interfaces, and subsequent postdoctoral research at the University of Cambridge investigated chlorine compounds in water.

The work is an attempt to translate “coral’s experience of anthropogenic effects in its native environment of water into human-perceivable signals in the native environment of humans” (Austen, 2017, p.70). It endeavours to promote a realisation of interconnectivity through experiencing how coral ‘feels’, dismantling the self/other and human/nature boundaries, mediated through artistic sensory intervention. Austen foregrounds the body as a site of knowledge creation and emotional connection.



Figure 5.1: The *Coral Empathy Device* (Austen, 2016)

5.1.1 Anthropocene roots

This sculptural work is motivated by a concern that sits behind much of Austen’s work: a deep frustration with a lack of active response to anthropogenic climate change, personally as well as societally. In particular, she expresses an interest in exploring both *what* we need to know and *how* we need to know it, in order to take action at the scale and speed necessary to mitigate catastrophic climate change. Austen indicates this concern in conversation:

As the IPCC report¹² that just came out shows us, we have not been acting as we need to and now everything is much worse and we need to do more. ... There’s a scientific consensus, everybody knows it, why are we not acting? What do we need to know? And how do we need to know it before we actually move on it? (Interview with Austen, 16 November 2018).

¹² The ‘Special Report on Global Warming of 1.5°C’ (SR15) was published by the Intergovernmental Panel on Climate Change (IPCC) on 8 October 2018.

Austen considers what motivation – and facilitation – is required to make the difficult choices that may be involved in such action, if scientific evidence alone is not a sufficient stimulus. The *Coral Empathy Device* is an attempt to explore the concept of empathy – recognising and imagining the experience and emotion of another – as one possible route to overcoming this inertia in the face of climate change and environmental degradation.

Austen points to research that indicates increased levels of empathy for nature can lead to improved environmental attitudes and behaviour (Berenguer, 2007): individuals asked to imagine how the animal *felt* while viewing an image of a bird covered in oil, as opposed to those asked to adopt an objective stance, allocated a higher proportion of hypothetical finances to environmental protection initiatives. Thus, the manipulation of empathy levels may lead to material shifts in activity. Moreover, this focus on empathy emerges from an assertion that anthropogenic environmental destruction that characterises the Anthropocene is underpinned by longstanding delusions of separation from the natural world. A failure to acknowledge that “species of all kinds are consequent upon worldly subject- and object-shaping entanglements” (Haraway, 2016, p.13).

The *Coral Empathy Device* is an attempt to make explicit our embeddedness in a biological system, through interrogation of the perceived boundaries between the self and the environment. For Austen (2017, p.70), incorporation of the other as part of the identified self is an essential component of empathy as it “increases the value of the other(s), thus increasing motivation for addressing environmental concerns”. In an endeavour to expand the range of environmental concern, this sculptural work attempts to blur the common distinctions drawn between self and other and challenge ideas of separateness between the human self and nonhuman nature. Davis and Turpin (2015, p.13) suggest that:

If we are to learn to adapt in this world [of the Anthropocene], we will need to do so with all the other creatures; seeing from their perspective is central to re-organizing our knowledge and perceptions.

In Austen’s work, coral is functioning as a conduit through which to realise the Anthropocene as an opportunity for reflection on our relationship with other species. After all, our endeavours to adapt to an altered world will be alongside those of other creatures.

The choice of this particular nonhuman other in the *Coral Empathy Device* is not arbitrary. Austen (2017, p.70) expresses a desire to move beyond the animals with which we are most familiar, “who share our lives, our timescale and resonances of our physiology” and with whom empathy may be cultivated more readily. Thus, Austen

chooses coral over, say, a dog or a cat. Despite physiological disparity, the human is entangled with coral in myriad ways: resources and services for communities across the world are drawn from coral, including those which are nutritional, structural, cultural, and aesthetic (Hughes et al., 2017). And the two species share several similarities. For example, both species are symbiotic, dependent on colonies of microorganisms: reef-forming coral and zooxanthellae algae; human and a plethora of microorganisms (often referred to as a ‘microbiome’, particularly in reference to the gut). It is actually the breakdown of this symbiotic relationship that leads to coral bleaching (Hine and Martin, 2016). So, whilst coral may appear to be a very different and distant species, myriad interconnections exist. This work attempts to create an awareness of those unseen or overlooked connections through a bodily and sensory cultivation of empathy.

In addition, Austen wanted to work with a species particularly vulnerable to the realities of environmental destruction. Coral is at the frontline of climate change, often referred to as the canary of the ocean: its high sensitivity to even the slightest temperature increase makes it a primary indicator of changes in climate. Warming seas have resulted in extensive bleaching events and catastrophic losses in coral cover, with once vivid and lively reefs rendered colourless and quiet. Such transformations have made coral a “cultural icon for extinction in the Anthropocene” (Schuster, 2019, p.85), at once both alien and iconic.

As a result, coral has taken on an increasingly symbolic role in climate change discourse, and thus become a familiar visual icon. In place of the Arctic-based charismatic megafauna (Leader-Williams and Dublin, 2000) – here I refer to the lonesome starving polar bear – bleached and lifeless corals have become an oft used visual indicator of contemporary climate change, and representative of broader anthropogenic impacts. The monochrome images of extensive coral bleaching make for stark viewing against the colourful arrays that characterise images of healthy coral reefs. This dramatic visual disjuncture has lent itself to popular media representations including the BBC’s *Blue Planet II* (BBC, 2017-2018) or Netflix documentary *Chasing Coral* (Orlowski, 2017). In the case of the latter, the story of coral bleaching is utilised specifically with an intention of provoking action in response to climate change (Exposure Labs, n.d.). Coral becomes the poster-child for climate devastation, a manifestation of Anthropocene as spectacle, explored previously in Chapter 2. Austen’s work is a deliberate challenge to the domination of the visual in our sensory hierarchy.

5.1.2 Knowledge through the body

Austen (2017) contends that empathy is most effectively stimulated through the body – specifically via sensory routes beyond the visual – rather than via explicit, codified

forms of knowledge. The visual sense of the audience is deliberately obscured during an interaction with the *Coral Empathy Device* to encourage engagement with the body and a focus on non-visual sensation. Accordingly, the *Coral Empathy Device* is specifically designed to convey embodied knowledge between human and nonhuman. Austen draws on research by contemporary phenomenologist Shogo Tanaka, particularly regarding intercorporeality and social cognition – that is, the bodily nature of our social interactions with other beings. Tanaka’s (2015, p.455) work outlines how intersubjective meaning may be established through embodied interaction “without being mediated by mental representations”. The *Coral Empathy Device* employs a combination of sensory stimuli in an attempt to “bypass perception and disrupt usual modes of cognitive engagement” (Austen, 2017, p.75). Though Tanaka (2015) focuses on intercorporeality in the human sphere, Austen extends the concept to interspecies interactions.

This bodily and sensory focus is manifested in the work through sonic, olfactory, and haptic dimensions. The spherical structure of the device is itself a loudspeaker: the internal lining acts as a membrane through which vibrations are conveyed, uniting sonic and haptic stimulations. In effect, as a visitor places their head inside the *Coral Empathy Device*, they are not only immersed in a sonic environment, but one in which this sound is also transposed into movement. Corals sense their environment via vibrations in the water: the fabric veil allows an audience to feel a similar sensation. The soundscape encountered in the device is composed of hydrophone and microphone recordings from the waters around Bergen, as well as audio recordings captured through specially adapted pH and conductivity meters, which convey changing salinity and acidity due to climate change.

Kelp from the recording site in Norway and dried fish from China create a smellscape, as well as forming silent markers of origination (whilst the idea was conceived in Bergen, the work was fully constructed at a residency at NYU Shanghai Gallery and the NYU Shanghai Program for Creativity and Innovation). This smellscape is intended to simulate exposure to microplastics. Now ubiquitous in the marine environment, corals have no means of escape from these plastic fragments. Confinement with this aroma in the globe of the *Coral Empathy Device* is designed to evoke a similar feeling of entrapment.

5.1.3 Within a constellation of work

We can locate the *Coral Empathy Device* within a constellation of related creative projects. I will briefly introduce four initiatives here as a broader contextualisation for Austen’s project. The first is an artistic and activist practice featuring coral, and its

current plight, as its subject. The second offers the perspective of another species as a route to empathy. The third is artwork that elicits empathy in response to its form rather than its content. The final example explores potentialities of interspecies empathy, specifically employing processes of embodiment as the route to engender connection.

The *Crochet Coral Reef* (2005) is an ongoing project of the Institute for Figuring, an organisation directed by Margaret and Christine Wertheim. It is an ever-expanding collection of hand-crafted coral entities, yarn knotted into hyperbolic forms and gathered together in large reef structures (Figure 5.2). The project draws attention to the interplay of mathematics and iterative processes of making, as well as to the destruction of reefs as a result of anthropogenic activity (The Institute for Figuring, n.d.), imbuing this traditional handicraft with activist intent. It is an initiative with collaboration and community at its heart, not only involving numerous crafters in the construction of each reef archipelago, but giving rise to satellite reefs all over the world, extending both the community of coral crocheters and the visual testimony of disappearing reefs. The project manifests what Haraway (2016, p.78) suggests is a “kind of hyperbolic embodied knowledge”.



Figure 5.2: *Coral Forest – Stheno & Coral Forest – Nin Imma, with Branched Anemone Garden, at Lehigh University Art Galleries. Photo © Institute For Figuring*

iAnimal is an immersive virtual reality project that draws on similar theories (Figure 5.3). Developed by Animal Equality, an international charity working to end animal cruelty, it offers viewers a first ‘person’ (though in this case, pig, chicken or cow) perspective of a slaughterhouse or factory farm. The immersive videos, watched through a virtual reality headset, are narrated by famous artists, actors and musicians.

The titles include *Through the Eyes of a Pig*, *42 Days as a Chicken* and *The Dairy Industry in 360 degrees*. The project has had global reach, received several awards and garnered a wealth of media attention, some of which documents declarations to stop eating meat (Nafarrete, 2016). This intervention presents an interesting paradox: diving deeper into a virtual construction of the world to cultivate a more intimate and effectual connection with the natural environment of the physical world.

Researchers at Stanford's Virtual Human Interaction Lab have demonstrated that immersive virtual environments (IVEs) enabling the embodiment of another species, like that used in *iAnimal*, lead to greater feelings of interconnection between the self (the experiencer) and nature (Ahn et al., 2016). These enhanced feelings of connection with nature – which were more significant with IVEs than with video – elicited a greater sensitivity to environmental risk for up to a week after encountering the IVE. Like the *Coral Empathy Device*, *iAnimal* functions on the basis that *experiencing* the standpoint of the other encourages incorporation into the identity of the self, and thus greater feelings of connection and aligned behavioural choices.



Figure 5.3: Experiencing *iAnimal*. Photo © Animal Equality

The third example of this constellation of work in which I locate Austen's *Coral Empathy Device* invokes empathy through form rather than content. Though artistic work often depicts scenes and characters that elicit emotional responses from an audience, Lucio Fontana's slashed canvases show no such content (Figure 5.4). Yet they evoke intense emotion in observers. It is the *form* of the work – the lacerations that puncture the surface of the canvas – that evidences violence and violation, and the imagination of an observer that engages with such indications. Researchers suggest that empathy is cultivated through an embodiment induced through the visual form: gestures implicated by the cuts in the canvas are corporeally felt by observers (Freedberg and Gallese, 2007).



Figure 5.4: *Spatial Concept 'Waiting'* (Fortana, 1960). Photo © Fondazione Lucio Fontana

The final project to discuss here is from Charles Foster, writer and academic at the University of Oxford, who documented his project in the book *Being a Beast*. He takes a less mediated route to interspecies experience, driven by the desire “to perceive landscapes more accurately” through engagement with a broader range of senses (Foster, 2016). Human experience of, and relations with, the natural environment are limited by our failure to use senses beyond the visual. Foster (2016) contends that this disconnection with most of our sensory capacity, and thus the rest of the natural world, is a consequence of our bipedal, upright nature. Thus he experimented with ‘living as’ other animals in an attempt to overcome this sensory bias. At various points, Foster has attempted to live as if he were a badger, an urban fox, a red deer, an otter and a swift, sleeping in woodland, sifting through bins after dark, eating earthworms (Figure 5.5). These, like Austen’s *Coral Empathy Device*, are experiments in what it is to be animal, and thus what it is to be human, the extent to which these boundaries might be challenged, and what happens when they are. These are enquiries that sit right at the very heart of the Anthropocene.



Figure 5.5: Foster sleeping out in Exmoor as an otter. Photo © Profile Books

5.2 The *Coral Empathy Device* in Leeds

I first became familiar with the work of Kat Austen in 2015 at *New Atlantis*, an immersive show by The Enlightenment Café, which featured another of Austen's interactive sculptures. *Not Waving* (Austen, 2015) featured miniature icebergs, tiny model people, a bath, a Twitter feed, and a hot water urn. This work also explored the dimensions of the human/environment relationship, with a particular focus on drought, flooding and human intervention. At that time I was involved in a project mapping the water system, and I had a personal interest in the blending of art and science. This initial chance meeting was the beginning of an extended conversation between Austen and myself, and I became acquainted with the rest of her practice.

I selected the *Coral Empathy Device* as a case study for a number of reasons. Firstly, personal connection with the artist made it far easier to coordinate an exhibition locally and negotiate research access. Secondly, Austen's work is borne out of deep Anthropocene concerns, and her practice engages with methodologies from both the arts and sciences. The *Coral Empathy Device* presents an intriguing response to the challenge of human/environment disconnection. Thirdly, I was also particularly interested in this work because of its focus on the body as a site of knowledge creation and exchange.

The *Coral Empathy Device* was exhibited in Leeds – its UK premiere – for a week during June 2018. Attempts were made to secure an exhibition space on the University of Leeds campus, though these ultimately proved unsuccessful. We instead installed the work at Lady Beck Studios, a former industrial warehouse located in a diverse area on the cusp of redevelopment (a few months following this installation, the artist collective that ran the studios made the decision to leave Lady Beck due to accelerating rent

increases and the uncertain future of the area.) The space was affordable, available, and most importantly, could facilitate the suspension of the sculpture from the ceiling.

Austen opted for a sparse presentation when exhibiting this work in Leeds. The *Coral Empathy Device* itself was suspended in the middle of the room, lit by two spotlights. Projected onto one wall of the gallery space was a short silent film which shows footage of the device itself in various contexts and people interacting with it. Two benches framed the projection, allowing visitors to take a seat if they wished. No other information or material was provided in situ.

Two events were scheduled alongside the exhibition. One was a talk by Austen to mark the start of the week-long installation, in which she gave a presentation about the *Coral Empathy Device* and her practice more broadly. Visitors were able to interact with the work beforehand, and ask questions of Austen following her presentation. Mid-week, I hosted a drinks reception for members of the Priestley International Centre for Climate (who provided some funding for the Leeds exhibition), which featured a presentation from a researcher at the Centre. Dr Maria Beger's work is focussed on coral reef ecology, located primarily in the Pacific and Western Indian Oceans. She provided a witness account of the plight of corals across those geographies and explored the idea of empathy through a focus on her research investigations.

The exhibition was promoted through the Priestley International Centre for Climate, across various University digital channels, and on posters around the University campus. It was also advertised on a city events bulletin. Most visitors had connections to the University, or to me, or were working at the studios that week. Only one visitor was encouraged in by the sign outside the space, with no previous awareness of the exhibition.

5.2.1 My encounter with the *Coral Empathy Device*

I was familiar with the idea of the *Coral Empathy Device* far in advance of my encounter with it as an immersive artwork. I was undecided, though, whether it would be preferable for me to share the experience of the research participants, or to hold off until the research conversations were complete. I harboured a concern that my own encounter with the work might influence the direction of these research conversations in unhelpful ways. However, following reflection on this, I settled on an acceptance that as researcher I have a situatedness which may be bracketed, to an extent, insomuch as I maintain an awareness of it. As such, I approached the *Coral Empathy Device* alongside other visitors as it hung in Lady Beck Studios.

Hanging solitarily in the broad, industrial space of the studio, the not-quite-spherical shape of the *Coral Empathy Device* cast an unfamiliar shadow against the back wall. Its muted, sepia colours hold connotations of vintage contraptions, of industry, playing into themes of steampunk, perhaps hinting at the industrial revolution and its enduring legacy of climate change and extended mechanisation. The suspended shape evokes thoughts of an anachronistic diving helmet, though the polished white bar stool beneath conjures the less romantic evocation of a hood hairdryer more common in salons decades ago. In an otherwise almost empty room the device cast a lonely silhouette, reflecting the solitary nature of the encounter between myself and the object. To experience the work as intended, one must do so alone.



Figure 5.6: I encounter the *Coral Empathy Device*. Photo © Rachel Sarah Media, 2018

An encounter with the *Coral Empathy Device* demands manipulation of the body, awkward manoeuvres to move the head into the void within the globe, whilst wriggling into the stool. It doesn't make for a smooth transition, but that is perhaps to be expected when entering into the experience of another species. This was a literal 'entering into' as I rose up into the device and disturbed the fabric within (Figure 5.6). A symbolic crossing of a threshold akin, perhaps, to the ritual of donning a mask in order to assume a new identity. It is here that Austen's ideas of blurring the self-other boundary become realised. Indeed, my body literally became part of the work: temporarily I was a component of the visual aspect of the sculpture for onlookers.

There is a disarming quality to becoming part of the work, as if one is being placed on display: subject to the gaze of others whilst your own vision is fully obscured in darkness. The material that lines the device protrudes from it far enough to cloak the head and neck, creating a veil that blocks out any light and descends the individual into darkness. This oppressive dark disoriented me and heightened my awareness of being watched by those outside of this enclosed space. This bewilderment was only reinforced by the accompanying sensory experiences. Firstly, an olfactory dimension, to which my initial reaction was one of disgust, or at least distaste, as I recalled memories of dwelling a little too long by the supermarket fish counters. Though conjuring thoughts of sea life, this manifestation was quite far from the expectations I held of feeling immersed in an underwater environment.

Secondly, the soundscape, which is entirely immersive as the head of the individual is cocooned within a loudspeaker, was baffling through its abstraction. Disjointed layers of noise, combining sounds that seemed almost mechanical, electronic, with some distant, more organic, echoes, resisted any concrete grounding in association. Steeped in a mechanical whirring and humming, I could begin to build up a picture in my mind, but this was quickly scrubbed out by an often sudden shift in the sonic landscape. I drew some comfort from recognising the loop in the soundtrack, the point at which it begins to repeat, which offered some structure upon which to cling amongst the disorientation, though my mind then wandered to guessing the significance of these patterns, and drew a blank.

My experience was always set against a backdrop of self-consciousness, the origins of which are twofold: a sense of being watched, as *part of* the artwork, as indicated above; and an expectation of profound insights as a researcher, to fill the pages of my thesis. The disorientation that characterised my encounter with the *Coral Empathy Device* concerned me; I *should* be accessing a coherent set of thoughts or conclusions, drawing something significant from the work. I retreated from the encounter with a sense that I had missed something, that I had failed to access what the artist had intended me to discover. This failure felt even more significant because I had access to the artist and had spent time with the ideas that informed the work. Though most visitors encountered the work with little or no preparatory or contextual information, I had access to information about how and why this work had been developed, and considerable interaction with the artist. Yet I still left the work feeling confused.

Of course, this could be exactly where the value of the work is located. To reside within an environment in which the conditions are rapidly shifting away from those that are optimal for my survival, conditions which shaped the path of my evolution, must be a particularly disorienting and uncomfortable experience. Anthropogenic influences on the marine environment, such as microplastic pollution and ocean acidification, result in

harm to coral species (Reichert et al., 2018), thus the discomfort of this encounter may have drawn me closer to an embodied acknowledgement of the harm corals are facing. Yet I did not emerge from the work with a sense of this: my attempts to unpick the meaning of the encounter in the moment perhaps obscured my ability to open myself to it bodily. The gap between my pursuit of a cognitive encounter and the embodied nature of the experience only added to a sense of disorientation.

It is through extended consideration of this encounter and my experience with it that I have unpicked these insights. It is only now, when I reflect upon the many hours I spent in the gallery space – unable to avoid the muffled, unrelenting loop of the soundscape,¹³ catching a brief breath at the fleeting pause, before it rolled into a cycle of dissonance once again – that I think of coral, unable to escape the deluge of microplastics or the creeping up of ocean temperatures. As a researcher, I have spent much time considering this work, discussing it with others who encountered it, and reflecting upon my experience. Such extended consideration is most likely a rare occurrence, as few have the time or resources that doctoral research allows. As I will go on to explore further in examination of participant experiences, the richness of an encounter with the *Coral Empathy Device* is extended through conversation and consideration alongside new information and perspectives.

5.3 Research conversations

During the week of its installation in Leeds, 52 people visited and engaged with the *Coral Empathy Device*. A portion of these visitors were approached and invited to be involved in this research: conversations were had with 14 of these. A few of this 14 attended either Austen's talk about the work or the presentation from Beger (I have indicated in the discussion where this is material). Conversations lasted between 10 and 60 minutes. All participants were contacted one month following the initial conversation, and again at six months, with questions concerning their memories of the encounter and the ways in which their consideration of the work may have developed. The discussion below draws on the rich content of these conversations and responses to elucidate central themes emerging from encounters with the *Coral Empathy Device*.

I begin by exploring the extent to which participants described experiences that align with Austen's ambition for the work, before moving on to examine the barriers that some participants encountered in their engagement with the *Coral Empathy Device*.

¹³ I was present in the gallery space for the entirety of the installation: 7 hours a day for 7 consecutive days. The audio dimension of the *Coral Empathy Device* is perceivable at some distance from the piece, if a little muffled.

This includes discussion of the role of contextual information, dialogue, and the personal archive in meaning-making. I conclude with examples of the legacy that experiences with the work may have.

As I have outlined above, Austen's work seeks to bridge the gulf of a human/nature dualism through the cultivation of interspecies empathy. Avoiding codified knowledge, and encouraging a sensitisation to bodily experience, the *Coral Empathy Device* attempts to offer us intimate, tacit acquaintance with the experience of coral in the Anthropocene. Austen imagined an experience with the work would follow a particular pathway:

Find out what the name of the work is; you see it under a spotlight; you have the affordance of putting your head inside it because its hinted at with the way that it's exhibited; you go in, you put your head inside it, you stay in and feel uncomfortable [laughter]; and then you take your head out and look at it again, and have a think and go on your way (Interview with Austen, 16 November 2018).

She employed subtle design choices in the installation, in terms of lighting and position in the space, to set out the shape of this pathway. My observations of visitors to the installation suggest that these choices were effective in guiding an interaction.

5.3.1 A spectrum of responses

Austen is clear about her intention that an interaction with the *Coral Empathy Device* should be characterised by discomfort, reflecting the adverse repercussions of human activity. Responses from a number of study participants align with this: Scott described the vibrations and soundscape as “freaky”; Zoe reported that placing her head in the work was “uncomfortable”; and Richard said it felt “really claustrophobic immediately, and for the whole time”. For Rebecca, the olfactory dimension was most disturbing:

I do remember the smell being unpleasant. I remember thinking ‘oh, I don't really want my head in this’, if it's the material that stinks, if it's, you know if it's not supposed, if it's because lots of people have had their heads in there. So I had that kind of like ‘eugh’ kind of immediate response.

Part of Rebecca's disgust is rooted in ideas of hygiene, as the smell confronts her with the reality of brushing up against material that many other faces have touched and breath has warmed. Even before a time of facemasks and social distancing, such uninvited intimacy is unsettling.

A smaller number of interviewees drew explicit connections between the discomfort of their encounter and the experience of coral. Alice, whose doctoral research is focused on coral, remarked on the unsettling nature of the “relentless noise” and the

claustrophobic “closeness of the cloth”. She acknowledged how this may be illustrative of coral’s experience:

I can sort of see how that would link to how corals might be feeling and how that might make you like empathise, which I guess is like the whole sort of motivation behind the project.

Alice’s use of language here is interesting. Her statement is one of potential rather than realisation, that the experience *might* induce empathy suggests that it has not done so in this instance. She acknowledges the theory behind the work but not the presence of any affect.

A collection of sensory and environmental aspects coalesced to give Tom the feeling of entering a “black site”, a covert military operation often specifically focused on cultivating discomfort. This stood in stark contrast to his expectations of a relaxing sensation accompanied by soothing “wave music”. He likened the visual appearance of the *Coral Empathy Device* to a “torture instrument”, thought the building seemed “sort of half abandoned”, and suggested the soundscape was “like a CIA-type white noise treatment”. Tom went on to describe his accompanying mental imagery:

I was kind of imagining myself as a coral not being happy with the pollution and temperatures attacking you and rising and [trails off].

Though Tom did not expand further on the emotional dimensions of this imagining, his statement outlines clear beginnings of empathy: identification with an ‘other’ and recognition of their emotional state. A month later, Tom reiterated this sensation:

The actual experience was quite stress-inducing and left you with the idea that corals are not having a happy time, which I imagine is a key part of the exercise.

Though this aspect of his encounter with the *Coral Empathy Device* stayed with Tom, the extent to which this may have influenced any attitudes or behaviour is unclear, as he did not offer any examples and I chose not to ask.

As I articulated above, not all study participants expressed feeling uncomfortable in their encounter with the *Coral Empathy Device*. Cristina’s description of her experience indicates an ambivalence:

I don’t think it was too disturbing, or too uncomfortable. It was more confusing than uncomfortable, I think. It wasn’t particularly nice or yeah, relaxing.

A confusion pervades Cristina’s encounter, eclipsing any particular emotional response (I will examine the issue of confusion in more detail later in this discussion). On the other hand, Orson is clear in his assertion that his experience was a relaxing one, as he imagined exploring a colourful coral reef in a submarine:

It was an interesting and calming experience. It, for me, created a nice space to meditate in.

Similarly, Jack reported a coupling of positive feelings and coral reef visualisations:

It felt actually quite comforting having material against your face and kind of gently moving. And I kind of actually imagined a coral reef kind of, you know, when they gently kind of swaying in the ocean.

Jack went on to suggest that the sensation of the material around his head was “quite pleasant actually”.

Interestingly, even Tom, whose experience was otherwise characterised by quite dark overtones, reported that “the feel of the material was actually quite comforting, like in the way it shifted around your head felt quite alive.” Though they may not have resulted in the impression intended, these accounts all indicate an attention to sensory experience: meaning drawn not from codified knowledge but from physical sensations.

5.3.2 Sensory tangibility and layers of knowledge

Lucia suggested that the physical dimensions of the experience were valuable in offering a tangible insight into what coral may be facing. However, this tangibility was only realised once coupled with an explanation of what lay behind the sounds and vibrations:

I do think kind of very strongly that if it wasn't for the device, 'cause you know, we all know about the changes of pH in the water already but the sound and the vibrations and – thinking back on it made it tangible. Made those changes tangible. 'Cause I don't think you gave us any particular *new* information, do you know what I mean? I was already aware of bleaching. But I think, so I don't know if it, for the feeling of empathy or not, but it made it tangible and it certainly made it memorable as well.

In discussion with Lucia at the installation, following her encounter with the work, I had explained that the soundscape heard within the *Coral Empathy Device* – and the associated vibrations – was created using hacked pH meters that emit sounds correspondent to the changing pH levels of water. It is this explanation, when coupled with the tangibility of the felt vibrations, that Lucia suggests led to a sense of empathy:

I started to feel empathy when you told us about how it was measured, with the pH thing? I think before that it was all a bit confusing. If it wasn't because of the explanation about the pH measuring thing and that was related to the sound, and I was like 'oh, ok, I can understand this now'.

Importantly though, Lucia is not devaluing the physical aspect of the experience here: this remains significant. However, the information seemed to function as an access point for realising this significance:

I'm certainly not going to forget how pH actually changes in the water, and how that, you know, how that affects corals and stuff because by hearing the noises and feeling the vibrations, it's so tangible that the pH is actually changing so much in short spaces of time.

This is a neat illustration of Elgin's (2002, p.22) assertion that aesthetic encounters "may enable us to recognize hitherto unknown facts or to recognize the importance of known facts that had previously been considered insignificant". The *Coral Empathy Device* offered Lucia a different way of grasping an understanding, weaving physical sensation with theoretical information.

In a similar way, Megan recounts a struggle to experience empathy during her experience and suggests that an absence of explanation lies at the root of this:

I think, for people to feel empathy towards anything, they need to be able to 'walk in their shoes' and without the proper understanding of what it was that made me feel quite so uncomfortable in there, it was difficult for me to feel anything but a bit perplexed, it would have been good to have the extra layer of knowledge. I think that's why I enjoyed having the coral presentation alongside the piece. The two worked well hand in hand.

Though Megan experienced physical discomfort, the sensations alone did not lead to a connection with the experience of coral. It is only following the presentation from Beger that Megan felt an emotional response of sadness and concern:

When you step out, and particularly having the talk afterwards, it really helped to process alongside what I'd felt when I was in the helmet with maybe some of the more complex emotions that I was feeling like sadness and maybe worry or regret as a human.

The presentation and subsequent group discussion brought the emotional aspects of the experience into focus, and enabled Megan to begin making sense of them. It enabled a reinterpretation of her experience in the *Coral Empathy Device*, drawing a new line of significance.

Through an integration of these different layers and forms of knowledge Megan's understanding of her experience developed, underlining an idea of the human as an intrusive force. A recoding of the experience takes place, and enriched meanings emerge when imbricated with new information or observed from another perspective. It is unlikely that either aspect alone – attending the presentation or encountering the *Coral Empathy Device* – would have led to Megan's insight. It is both the experience and the new knowledge about coral ecology and bleakness of their prospects that Megan draws on to develop this richer understanding.

As well as sadness, Megan also expressed a sense of guilt, both immediately after encountering the work, and six months later. She implies that this guilt

is aroused specifically by content from the presentation rather than the encounter with the *Coral Empathy Device*, though these two became difficult to separate:

So talking about the refuge¹⁴ and almost trying to think about humans identifying these final places where we're going to maybe put a lot of extra effort into saving coral made you, well made me feel really conscious of our terrible, terrible impacts on the planet.

After six months, this encounter with the *Coral Empathy Device*, and the accompanying presentation, has become part of a tapestry of experience and knowledge. It may have acted to shift the configuration of Megan's attention, altered the frame through which subsequent experience was met.

5.3.3 Confusion and contextual information

A work of art emerges from a particular motivation and its creation occurs within a particular context, involving knowledge and resources drawn from the personal and cultural context of the artist. The extent to which the artist – or a curator – chooses to make this explicit, or share the resources involved, may often be an artistic choice, or limited by logistics, yet it is also material to the meaning-making process. Austen's *Coral Empathy Device* is an interesting case in which to consider the role of contextual information or meaning-making signposts.

Austen's choice to present the *Coral Empathy Device* with minimal accompanying context was an aesthetic one, in keeping with a deliberate focus on bodily engagement:

In an exhibition environment I think the aesthetic is much more powerful, and it has a much more powerful embodied impact without that contextualisation of conscious cognitive and codified knowledge (Interview with Austen, 16 November 2018).

For Austen, contextual materials would undermine a central objective of the work, which is to broker an understanding that is entirely tacit, free from language. In keeping with this, Austen chose to exhibit the work without language-based contextual information. In Leeds, the installation space contained the work itself, and a short, silent video projected onto one wall. The video featured a montage of scenes: close up images of the artwork; people interacting with the work; and the sculpture located in various settings. No narrative or description accompanied this video.

Austen suggests that the explicitness of the title and the visual appearance of the work provides enough context for a meaningful encounter with the *Coral Empathy Device*.

¹⁴ Beger's presentation included description of selected subtropical reefs as refuges for tropical coral reef species vulnerable to climate change.

However, in practice, this shortage of contextual information often resulted in a sense of confusion, as expressed by several participants in this study. Without a foundation upon which to begin a process of meaning-making, Cristina's experience was characterised by bewilderment:

I think one of the main feelings probably was confusion, because I didn't know exactly what was happening I guess.

She suggests that her ability to engage depends on an explicit understanding of what sits behind the sensory aspects of her experience. This begins to illustrate Sedgman's assertion that in order to gain value, an audience requires some indication of how they should orient themselves towards an experience (Sedgman, 2017).

Rebecca and Isabel express similar sentiments: additional information to aid their understanding of what they were hearing or feeling would have improved their encounters with the *Coral Empathy Device*. Scott considered his struggle to make sense of the work to be his own deficiency:

Maybe there's something I'm missing?

Scott's expression of confusion exhibits both an expectation of art – that the moment we encounter a work we expect something to happen (Idema, 2014) – and what Bourdieu et al. (1991) suggest is a perceived incompetence in the face of an assumed normative relationship with art, characterised by understanding a mastery and ease.

The lack of contextual information, Scott suggests after some reflection, is a barrier to access, placing a limit on who can engage with the work and what they can gain from an encounter with it:

Art and complex issues that *Coral Empathy* tries to tackle need to be accessible, and I don't think this is possible without context.

As he goes, on to say, "it's quite hard to interpret art anyway, do you know what I mean?" Though research from Gross and Pitts (2015) suggests that the enjoyment of artworks can be facilitated by an openness to ambiguity – amongst other audience attitudes – the right balance must be struck. If an artwork is too ambiguous, its audience may experience confusion, and cease to engage with the work. Research by Silvia (2010) indicates that whilst interest and confusion are linked, the former breeds knowledge, and the latter breeds ignorance. When the balance tips towards confusion rather than interest, Silvia (2010, p.75) points out that "people usually withdraw and spend their brainpower on something else".

Yet Austen works from the basis that an audience are already equipped with an awareness of the plight of coral under climate change:

You have enough of that information already, all that codified information you can read it on any website, any news site, you know you can read about

the plight of coral anywhere. ... and coral is commonly known as such a climate icon (Interview with Austen, 16 November 2018).

If an audience requires additional context, Austen suggests that they refer to journal papers authored by her which provide insight into the motivation behind the work and the resources she drew upon in its development. This is an interesting suggestion, and if we bring in the concept of cultural capital, we might begin to consider this a form of social restriction. Though these papers may offer context about the work, a reader must be familiar with the language of the academy and where to seek out such publications. All of these present barriers to richer understanding and deeper engagement with the work.

What this exploration begins to uncover are tensions between forms of knowledge and the ways in which they are considered to interact. Whilst Austen chose to deliberately avoid codified forms of knowledge, many participants in this study expressed a desire for it. Though Austen (2017, p.70) contests that the *Coral Empathy Device* is a “synthesis of multiple knowledges”, when we examine the work a little more closely, it seems that this is not entirely the case. Whilst the development process of the work involved a blending of scientific data and emotional instinct, the work that an audience encounters is stripped of anything codified. With a focus on embodiment and a rejection of contextual information, Austen is (2018, p.7) “treating the body rather than the mind as the knowing-subject”. In this statement, it appears that Austen is working upon the same dualistic foundation of mind/body as the prevailing knowledge hierarchy that she is attempting to dismantle.

Though there may be limitations in codified language, it is nonetheless an essential aspect of our sense-making apparatus. To do away with codified knowledge and replace it with purely embodied communication is simply reversing a problematic dualism. Regarding empathy in particular, researchers suggest that it involves multiple axes of engagement. Empathy is what Hollan and Throop (2008, p.387) define as “the complex emotional, embodied, and cognitive work that is implicated in approximating the objective experience of another from a quasi-first-person perspective”. Their construal is explicit in its acknowledgment of a blend of knowledge forms. The conversations with participants in this study indicate that a similar blend, rather than a singling out, is equally necessary for meaning-making in encounters with art.

On the other hand, though in a minority, Abigail appeared to embrace this lack of context as an opportunity to reconsider the notion of empathy. She wonders whether the very attempt to access, and convey, the experience of another is futile:

I guess what it more made me feel like - it's what I think about a lot anyway - about how people access knowledge and try and represent it, or access an

understanding of the world and then try and represent it, and whether or not there's a sort of inevitable failure in that.

Here, Abigail echoes Nagel's (1974) musings on what it is to be a bat. Not what it would be for him, a human, to behave as a bat does, but what it is like for a *bat* to be a bat. Not only does a bat operate using an entirely different sensory framework to the human, but Nagel also suggests that there is a quintessence of each individual being that is more than the sum of the constituent parts. This raises fundamental questions about the accessibility of the experience of another being, no matter their species, as "our own experience provides the basic material for our imagination, whose range is therefore limited" (Nagel, 1974, p.439).

Our attempts to imagine the experience of coral are filtered through our own phenomenological orientation and bounded by the limits of our sensory abilities. Abigail echoes Nagel's sentiment in her assertion that coral is "a whole entirely other thing" and thus our endeavours to access experience of their being will always fall short. Abigail points to a conflict between Austen's attempts to avoid anthropomorphising coral – to maintain its alien-ness – and desire to represent the experience of coral. Any human effort to access, and represent, the experience of another species necessarily involves an anthropo-lens. Our knowledge is always situated (Haraway, 1988).

Abigail goes on to suggest an alternative rendering of empathy, stimulated by her encounter with the artwork. Perhaps, she speculates, empathy requires a commitment to remain present with an experience despite a lack of understanding or inability to imagine the self into the position of the other. Abigail offers a revised conceptualisation:

It was making me think about what empathy was, and about, not empathy as understanding but more like as a commitment and capacity to be there – which is a, a slightly different take on empathy ... Which is an interesting thing about the coral, maybe just being there sort of staying with it and thinking about it quite seriously and what's happening to it. But not sort of like thinking you can essentially feel what it feels but you are just... [trails off]

She begins to speculate whether the value of the *Coral Empathy Device* may lie in disrupting our typical ways of attending to the world, provoking a reassessment of our usual attempts at understanding others, encouraging us to consider remaining present with what may not be easily understood. Abigail points specifically to the idea of "understanding as a product of language" and the potential for misinterpretation. Empathy founded entirely on language is opened up to distortion; empathy founded on a commitment to be present even in the absence of explicit understanding avoids this potential.

5.3.4 Meaning through dialogue

Several conversations in this study indicated how the meaning of works “can be renegotiated according to the specialisms of others, and the social dimensions of audience experience” (Warren, 2012, p.98). Richard reflected on how listening to others discuss their experience with the work influenced his understanding of his own encounter:

It was really interesting. Like, to hear other people’s perceptions and [laughter]. I guess at times I realised the things that I didn’t get, like in terms of the smell and then it confirmed things. I was like ‘oh yeah I kind of had an inkling that was happening’ and then things I hadn’t thought of at all. ... Its’s also I guess sort of adding or making the connection between just these kind of like sort of vague feelings I was having to some science and some messages that I can then be like ‘oh yeah, that makes the connection now, that works.

The meanings emerging from Richard’s experience evolved as social exchange gave shape to what he had felt whilst his head was encapsulated within the *Coral Empathy Device*. Dwelling in community with ideas, and without fixity, enabled Richard to clarify thoughts and connect feelings.

Similarly, Abigail indicated that it was through a later discussion with her flatmate, who had not attended the installation, that she explored aspects of her encounter in much more depth:

I was talking to my flatmate about it and we were talking about how contact is something and that contact between bodies almost brings your body into being, as opposed to dissolving it. When you get touched – it’s like you remember that you’re there but in a quite physical way. I thought that was interesting and I wondered whether it almost countered what the device was trying to do, because potentially what you might be trying to engineer was an experience that was about not being human but what it was doing was drawing attention to my face and was very sort of human.

Abigail’s experience with the *Coral Empathy Device* provided a platform for a rich dialogue exploring intersubjectivity and touch.

Reason (2010, p.24) suggests that an experience with art is not just what’s going on in a person’s mind during a performance or encounter, but extends out to include “what they do with this experience after the event”. Reflection through dialogue can become an essential aspect of the experience itself, which appeared to be the case for several participants in this study. For Lucia, a social dimension offered additional layers of insight to draw upon, providing different angles and perspectives:

If you go to a, the Yorkshire Sculpture Park or if you go to, I don't know, wherever, galleries or I don't know, if you're with someone else you can maybe chat and ... because people perceive it differently and then you see different things but here you're very much- And then maybe that's why for me it was important when we were discussing it.

Similarly, Martin places value on dialogue and laments its absence in his experience with the *Coral Empathy Device*:

When I know somebody's been to see an artwork I will try and engage somebody in a conversation just to, because I'm curious to know how they experienced it and if they had a similar experience. But I couldn't with this unfortunately, yeah.

This desire for dialogue indicates its importance in the meaning-making process for some participants. Reason (2010, p.22) goes as far to suggest that “the meanings of an experience are only accessible through engaging with the *retrospective* consciousness of the individual.” In certain cases, intersubjective reflection is the key to unlocking meaning from an encounter with art.

5.3.5 Personal archive and cultural context

Conversations indicated that many participants drew on their existing knowledge, everyday experiences and their cultural context to make sense of their encounter with the *Coral Empathy Device*: meaning-making became autobiographical. Research by Foreman-Wernet and Dervin (2016) demonstrates that regardless of the degree of familiarity with the arts, meaning emerges through drawing on personal experience – or our personal archive – and becomes established in relation to our own lives. The smell of the work was most prominent for Rebecca, evoking childhood memories:

What's it called, when you have a tideline on a beach? That's what the smell made me think of. Yeah seaweed and yeah just like beaches when I was a kid I guess, you know. I grew up in Suffolk, so I spent a lot of time on the on beaches and it just made me think of looking for like shells and things. So that image is what I see, so sort of a beach rather than coral. But it is the smell definitely that did that.

Mental imagery has been constructed through olfactory association with an available, resonant experience. This memory remains the most pertinent aspect of the experience for Rebecca when recalling it a month later in an email response:

If I think back, it is really the smell that comes to mind. I'm not even sure I remember the smell in the same way anymore, as it wasn't an overt emotion at the time. However, now when I think of it, I get a yearning for the coast/sea. I grew up by the sea, and have always had hobbies connected to it, but it has been ages since I've had the opportunity to spend any time on the coast.

Calling to mind the experience with the *Coral Empathy Device* aroused the emotions that became associated with it during our first conversation about the encounter.

Isabel, when discussing her previous emotional responses to art, highlights the relationship between personal experience and contextual information in the meaning-making process:

But those, thinking about it, have resonated with experiences I have had previously so it's always my own experiences bringing something to the piece of art and that generating a response. Without having any previous experiences with being coral it's very difficult to bring the context to it, for me anyway.

In her most memorable encounters with art relevant and resonant points of reference emerge from her personal experience to imbue the artwork with additional layers of meaning. Isabel expresses a struggle to replicate this with the *Coral Empathy Device*, pointing to the absence of context upon which to draw. Far from being unwilling to do the work, a lack of proffered cues and tools often means “audiences simply do not understand what kind of input or receptivity is required” (Sedgman, 2017, p.317).

Conversely, Alice's academic research is focused on coral reef ecology and she had particularly rich expertise to bring to an encounter with the *Coral Empathy Device*. There was effort involved in decoding the experience, unpacking the representative elements and aligning them with aspects of coral she was familiar with. She went on to list these:

So, there was obviously the noise, and that was you know, about the noise pollution and that was a very obvious one. But like the sort of the way the cloth was over your face and you were breathing on it, it gets quite hot, and I thought that was, that's quite interesting as well because obviously, sea surface temperature increases are having a big effect on coral reefs as well, so that sort of idea of it being like quite stifling, I thought was quite clever. There was, this is, I can't claim to have drawn this one myself, this is somebody else mentioned it when I was talking to them, erm but the like the smell of the cloth was kind of horrible and I think that was to do with the sort of pollution. And yeah like the, I don't know smothering of coral reefs as well and there was something quite deliberate about that as well.

In what appears to be a very systematic process, it is as if Alice is demonstrating a level of mastery over the artwork, deciphering each representative element that is apprehended. She possesses knowledge and expertise that create a framework for interpretation of the work.

Some participants made references to popular culture, specifically nature television documentaries. Foreman-Wernet and Dervin (2017, p.52) made similar observations in their research, suggesting that meaning-making in the arts “is subsumed within popular/mass culture and the framework it imposes on everyday sense-making”. Tom

describes a very visual image in keeping with the themes of violence that characterised his experience, drawn from a prominent visual cultural reference:

I was kind of imagining as a sort of David Attenborough programme, watching these you know the corals that sort of in slow motion they kind of interact and kill each other and fight over territory but really slow motion.

Similarly, Scott referred to David Attenborough's "*Blue Planet* and stuff" when describing what came to his mind during his experience. Coral and marine issues have become familiar to an audience in the United Kingdom, which Scott claimed was part of his motivation to attend the installation. For these participants, the *Coral Empathy Device* makes sense through a lens of popular culture.

5.3.6 Expectations of art

Wrapped up with this personal and cultural context are expectations of what an experience with art should be and normative ideas of how art should be attended to. In their study on audience sense-making, Foreman-Wernet and Dervin (2017) point to a tension visible in the experiences of participants involving their view of the arts as demanding 'correct' forms of engagement and interpretation, tied into a view of the arts as elite. Richard's account of his experience with the *Coral Empathy Device* suggested that he considered there to be a 'right' feeling to achieve:

I'm maybe focussing more on what I'm supposed to be feeling rather than just like letting go and feeling.

He acknowledges that this striving for a specific – but undefined – outcome got in the way of his connecting with the work. Similarly, Isabel suggests that the idea of a 'correct' experience is problematic:

There's kind of always the fear of 'am I experiencing this 'right'?' which I think is a fake fear but you know, 'am I getting the right experience out of this?', you know. And with art perhaps that's the wrong question to ask. In fact, with art that probably *is* the wrong question to ask.

Isabel's acknowledgement that the idea of an intended outcome may place limitations on her interactions with art is a useful insight into the various ways in which we choose to arrive at, and process, our experiences, and how this may be shaped by normative ideas.

One month following our initial conversation, Megan suggests that though additional contextual information would have improved her experience, it may have changed the nature of the work:

On further reflection, I would have liked a little more context around the piece, even just a sign next to the piece to explain the different elements,

maybe that would have turned the piece from artwork to a scientific exhibition and might have impacted people's ability to make their own interpretations which might have been why the artist chose not to do this.

This suggests that Megan considers contextual information to be incompatible with what she recognises as 'art'; that to include information or context is anathema to aesthetic encounter. Her assertion echoes notions of the incompatibility of art and reason that Wind (1960) suggests have been long held: the idea that reason diminishes the creative imagination in both artist and spectator has been accepted as a basic truth since the Romantic period. This assumption comes through in Austen's reluctance to provide contextual information alongside her work, as well as in this comment from Megan. Though the framing offered by contextual information may be an intrusion for some (who may choose not to draw upon it), its absence may result in levels of confusion for others that leads to disengagement.

Megan went on to describe another interactive work that she had encountered, though was clear to point out that it had been categorised as 'science' rather than 'art':

But it wasn't described as art. 'Cause I, I would say it was and I mean we also crawled through like the veins of a whale, you can do something there but the again it wasn't really described as art, it was more like supposed to be scientific in nature.

It is interesting to consider what the categorisation as 'art' suggests to an audience, and how it might influence the way they encounter and engage with the work. As illustrated above, whilst Megan expresses a desire for additional contextual information, she goes on to speculate whether this would interfere with its categorisation as 'art', and instead establish it as 'science'. The epistemic expectations of an experience with what is categorised as 'science' appear to differ from those of an experience with 'art'.

5.3.7 Legacy

The experience each participant has with the *Coral Empathy Device* may then become part of the personal archive itself, a reference point to employ when meaning-making in future scenarios. It has become part of Zoe's conceptualisation of coral and has directed her attention to art-science projects where it may not have rested previously:

Whenever I hear someone mention coral I think of the [*Coral*] *Empathy Device* and the talk. I have started noticing collaborations between science and art more, and recognising its importance.

Similarly, for Richard it has established a renewed attention towards coral:

And it just sticks in the head and in the memory, and I think that is also quite effective as a tool because you know I'll always remember the issue now. I'll be like 'oh yeah, coral, that's important' it's nothing to do with my

research particularly and I only know about it in kind of lay terms but I remember that exhibition, I remember it's really important.

Abigail actively drew on the experience soon after, when a pigeon became trapped at her mother's house:

I spent quite a lot of time talking to it and trying to be with it - in particular thinking about how birds don't understand what glass is.

An extended contemplation on empathy provoked by the experience with the *Coral Empathy Device* informed her response to this situation.

It is a more dormant element of the personal archive for Isabel, though a potential point of reference nonetheless:

Maybe if/when coral becomes a news topic again it would jog associations, but I feel at present it's more a reference experience sitting in the background, rather than something I am actively building upon.

It is a similar scenario with Rebecca, for whom the memory has only surfaced when watching a repeat of *Blue Planet*, with its marine content.

It may also be the case that such an experience *doesn't* become a prominent feature of the personal archive, as was the case with Lucia:

I haven't talked about the device to anyone else since we last talked, it just hasn't come up and it had kind of "slipped" away from my mind to be honest.

Alice shared a similar sentiment, and drew a conclusion as to what this may imply about the *Coral Empathy Device*:

I've not thought about it too much since I saw it which I suppose might be an important point about its impact.

It is difficult to say whether the memory of this experience will be stirred up for Lucia or Alice at some point in the future. Similarly, from these comments we cannot conclude that the encounter had no impact on Lucia or Alice at all. However, it is not something that they hold front of mind.

Scott was clear that his encounter with the *Coral Empathy Device* did not result in an instrumental shift of his attitude towards coral:

It didn't make me think even more, like, 'I really wanna help these corals' or whatever, like 'I really wanna save the corals' particularly.

However, he expressed how the experience highlighted an importance of contextual information when engaging with art:

What stuck was that art without context lacks meaning especially when it's trying to convey an important issue such as bleaching corals. It has helped me appreciate context, and encouraged me to engage with the narratives and

history surrounding any art piece and the ideologies that it may be grounded in.

Scott's interaction with the *Coral Empathy Device* led to an altered approach to engaging with art.

5.4 Conclusion

This chapter has explored how Austen's *Coral Empathy Device* engages with ideas of the Anthropocene – specifically regarding the human/nature relationship – and has examined the experiences of individuals engaging with this platform. In some cases, Austen's intention of an uncomfortable encounter was realised, though the extent to which this led to expressions of empathy with coral was limited. In an attempt to shake us from a reliance on codified knowledge, Austen's choice to strip out all context imposes a problematic mind/body dualism that left some participants baffled. Though the physical dimensions of the experience afforded a tangibility in some instances, this was accompanied by empathy only when alongside an explanation of what sat behind the sensations. Layers of knowledge, garnered through different modes, flesh out understanding.

Though the *Coral Empathy Device* engages with issues of the Anthropocene, few research conversations indicated that these ideas resonated significantly with those who experienced the work. Instead, many expressed facing confusion. Thus, much of this discussion has focused on what we could consider broader challenges associated with meaning-making in the arts. Dialogue, cultural context and the personal archive all played significant roles in encounters with the *Coral Empathy Device*, offering pathways to meaning in the absence of contextual information. However, interaction with the work also led to important reflections on the nature of empathy and what it might mean to sit alongside other species in the Anthropocene.

Chapter 6 Journeying to the Anthropocene: a study of the *Deep Time Walk*

This chapter presents my analysis of audience experiences with the *Deep Time Walk* (Deep Time Walk C.I.C., 2016). It begins with a description of the work itself, including its history and development, before moving on to examine some of the concepts that underpin the work. In particular I look at the ways in which it engages with ideas of the Anthropocene and thus why it is of interest to this research project. I then locate it within a constellation of other work that provides some context in terms of art that addresses similar themes and employs related mechanisms. Following an account of my own experience of the *Deep Time Walk* I move into the specifics of my enquiry and explore the themes that emerged from my research conversations. These include ideas and reflections that the work stimulated in participants, as well as aspects of the work that enabled or hindered engagement.

6.1 The *Deep Time Walk*

Deep Time Walk (Deep Time Walk C.I.C., 2016) is a digital app that narrates a journey through deep time as the listener walks a distance of 4.6 kilometres (Figure 6.1). Spanning the 4,600 million year history of the Earth, from the birth of the planet to the present day, it plays with scales and transposes this temporal dimension into a spatial one: each metre of walking represents one million years of the Earth's evolution. The narration is dramatised through dialogue between a scientist and a 'fool',¹⁵ covering key markers of Earthly deep time, including the Late Heavy Bombardment,¹⁶ the emergence of photosynthesis, and the multiple mass extinction events, all drawn from the latest geological research. An "electroacoustic soundscape" provides the backdrop to the narration of the *Deep Time Walk*, designed as a "creative rendering of what Earth sounded like over 4.6bn years of deep time" (Deep Time Walk C.I.C., 2019). Humanity appears only at the very final stages of the walk, just 20 centimetres from the finish line. The Industrial Revolution, which occurred two centuries ago, appears with just one fifth of a millimetre remaining. The Anthropocene, with its proposed stratigraphic marker coinciding with the 1945 atomic bomb tests, emerges even closer to the end of the walk.

¹⁵ Here, a 'fool' is someone who speaks the truth.

¹⁶ The Late Heavy Bombardment is a hypothesised period of intense meteor showers that left impacts on the surface of the Earth, other planets, and their moons.

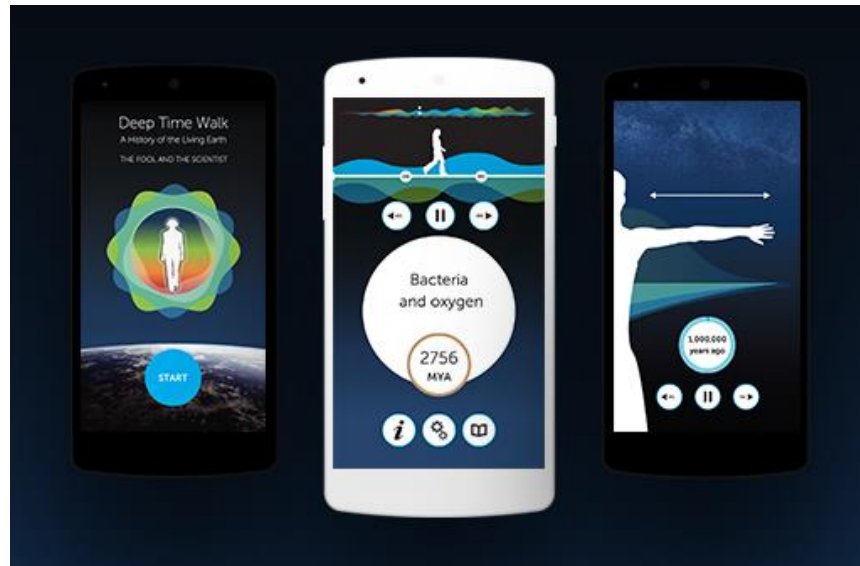


Figure 6.1: Screenshots of the *Deep Time Walk* app. Photo © Deep Time Walk C.I.C

The concept that sits behind the *Deep Time Walk* emerged from two separate projects, both of which explored walking as a route to engaging with deep time. Firstly, ‘The Walk Through Time’ was envisioned and established in California (U.S.A.) by Professor Sidney Liebes of Hewlett Packard Laboratories. Concerned with the pace of environmental degradation he observed in his hometown, Liebes set out to “provide a viscerally meaningful perspective on how humans should conduct themselves to avoid precipitating the next mass extinction of species” (Foundation for Global Community, n.d.). Initially it featured a series of illustrated information boards placed at intervals along a one mile walk, with each foot representing one million years of evolutionary time, originally displayed in 1997 as part of a meeting of Hewlett Packard scientists. The initiative was then promoted globally at conferences, gatherings, and museums. The second project was a guided ‘Deep Time Walk’ along the south Devon coast (U.K.). Developed by Dr Stephan Harding and his student Sergio Maraschin, this walk has functioned as a core component of the holistic learning experience at Schumacher College since 2007.

The two groups came together in 2013 to develop the *Deep Time Walk* mobile guide, increasing the reach of the experience by removing geographical limitations. A large team was involved in its production, made up of scientists, playwrights, designers, actors, and radio producers, including Peter Oswald, a previous Playwright in Residence at Shakespeare’s Globe in London. Oswald co-developed the script with Stephan Harding, and Jeremy Mortimer, a BBC radio drama producer, who directed the audio

recording. I draw attention to the experience of these members of the team to highlight the artistic influence engaged in the development of this work. The *Deep Time Walk* website also features a number of endorsements from leading thinkers across the environmental movement, including sociologist and anthropologist Bruno Latour, philosopher and cultural ecologist David Abram, Earth scientist James Lovelock, and Satish Kumar, editor of *Resurgence Magazine* (Deep Time Walk, n.d.). It is worth considering what such a homogeneous group may indicate about the intended audience of this work.

A user of the *Deep Time Walk* can choose to walk anywhere. Unlike many locative media projects, it doesn't utilise GPS, or depend on Wi-Fi connection or mobile signal. Fred Adam (2017, n.p.), Art Lead for the digital app, expresses that this was a deliberate decision to "allow each walker to explore their own position in relative time and space by making use of the pedometer to personalise the auditory experience for each step walked." The app is available on all mainstream platforms. Originally it could be downloaded for a cost (the team experimented with different price points) but it has now become part of the online 'gift economy'¹⁷ and is available for free. A suite of materials has also been created to complement the mobile app, and to extend the experience to those without access to a smartphone. These include a set of Deep Time Cards, a Deep Time Line Bookmark and an audiobook on CD. However, in this chapter I focus on experiences with the mobile app only.

6.1.1 Anthropocene roots

The *Deep Time Walk* attempts to evoke a "profound shift in perspective, awakening us to our magnificent ancestry" (Woodford, 2018), introducing a geological conceptualisation necessary to initiate a renewed sense of humanity's place in the world. Geology, suggests Bjornerud (2018, p.16), "provides a lens through which we can witness time in a way that transcends the limits of our human experiences". Yet it is deeply human: it is the trajectory from which we have emerged, the history with which we are intimately entangled. At once, a geological lens radically expands our perception of time and grounds it firmly in the present moment. Through a comprehension of the vastness of deep time, and locating humanity within it, Co-Founder and Executive Director Robert Woodford suggests that users become awakened to "the destructive impact that we are having on the integral function of the Earth system, in an abrupt rapid way that has never happened in the history of Earth" (Interview with Woodford, 7

¹⁷ The gift economy refers to a method of exchange based on goods given freely and without agreement of future rewards.

December 2018). Accordingly, we might think of deep time as a threshold concept (Meyer and Land, 2003), opening up a new way of thinking, a transformed way of understanding the world. The creators hope that this temporal reorientation will inspire positive action in those who experience the *Deep Time Walk*.

Deep time is a foundational concept necessary for the comprehension of geoscience, evolutionary biology, astrophysics and climatology. A failure to grasp this concept is considered a ‘critical barrier’ to learning in many areas of science (Trend, 2002). Moreover, it is foundationally significant in how we understand our place in the world. At a time when “the frictionless, atemporal instantaneity of digital communications weakens our grasp on the structure of time” (Bjornerud, 2018, p.164), deep time brings with it a sensitisation to the rhythms of the Earth and a deeper appreciation of the long term consequences of human activity absent of such an awareness. Yet, Chakrabarty (2018) decries the absence of the concept in the broader discussions of the Anthropocene. Despite its status as an official geological epoch-in-waiting, “in most discussions of the Anthropocene, questions of geological time fall out of view and the time of human world history comes to predominate” (Chakrabarty, 2018, p.6). This oversight, Chakrabarty (2018, p.6) suggests, comes at a price, “for if we do not take into account Earth-history processes that outscale our very human sense of time, we do not quite see the depth of the predicament that confronts humans today.”

To address this absence and “bring the geological into human modes of dwelling” (Chakrabarty, 2018, p.29), presents a significant challenge. Such temporal scales are beyond human perception, quite at odds with the temporality of our day-to-day lived experience, a gap that is often considered “unbridgeable by the human mind” (Raab and Frodeman, 2002, p.77). Moreover, suggests Bjornerud (2018), many narratives of deep time fail to adequately convey our fundamental entanglement with the Earth's history, tacking human history onto the long tail of geological history, with only superficial connection. As discussed in Chapter 2, this compartmentalisation of human and geological time serves to emphasise the human/nature dualism. Thus, the attempt that the *Deep Time Walk* makes to interlace one temporality with another can be considered a step towards dismantling this dualism, towards a recognition of our multispecies entanglement (Haraway, 2016). Rather than presenting an experience in which geological time replaces human time, or collapsing one into the other, the *Deep Time Walk* offers a chance to hold these concurrently. Though deep time presents a history within which humanity is only a fraction, the creators of the *Deep Time Walk* set out to create an experience that positions the listener in the spotlight, as agent of subsequent positive change.

A tension accompanies the introduction of a deep time perspective, however. On such a timeline, the presence of humanity becomes little more than an instant, the blink of a

geological eye, paling into insignificance. Or, with a slight shift in framing, humanity becomes an out-of-proportion force with a destructive slant. This tension between what Macfarlane (2019, p.15) suggests is a “dangerous comfort” in one configuration, or a radical responsibility-provoking perspective in another, is evident in the research conversations that I will move on to discuss later in this chapter. The *Deep Time Walk* contains affordances intended to tip a user towards responsibility. Woodford (2018) clarifies that part of their core strategy is to evoke an emotional, visceral reaction that will “drive positive action and hope”. At the end of the walk, users are presented with a ‘What’s next?’ signpost. Clicking through this signpost reveals recommendations to visit websites of initiatives including Transition Towns, 350.org and the Earth Charter. The longer-term vision includes moving further in the direction of transitional arts practice (Neal, 2015), creating a network that operates on both global and local levels, connecting people to groups in their locality with whom they can enact change.

The formulation of the *Deep Time Walk* narrative, as a discussion between a scientist and a fool, was an endeavour to overcome another problematic fragmentation: that between disciplines and forms of knowledge. The original incarnation of the *Deep Time Walk* formed a central component of the learning experience at Schumacher College. It has a basis in holistic science: a rejection of the abstraction, fragmentation and reductionism that characterises some forms of knowledge. Challenging the idea of objectivity, the choice of these two characters operates to make explicit that every narrative involves assumptions, to underline the importance of thinking in different ways. As Woodford shares, “what we’re doing very explicitly is having a scientist talk openly with someone that’s really challenging that worldview but trying to get to the depth of that worldview, and expand that worldview” (Interview with Woodford, 7 December 2018). The narrative has been constructed to confront the notion that fragmentary knowledge offers a true representation of the world. However, Woodford is careful to make the distinction between what the *Deep Time Walk* offers and the offerings of other creative encounters. They are not, he suggests, “in that land of entertainment, rather we’re in the land of trying to change the way people view the world” (Interview with Woodford, 7 December 2018).

6.1.2 Role of walking

With a focus on auditory input and kinetic sensation, the *Deep Time Walk* also challenges the mind/body dualism. Locative technology enables a mapping of the timeline onto the walking distance, locating the listener in a spatio-temporal sphere, situating the body as a site of knowledge development. Co-script writer, and originator

of the Deep Time Walk at Schumacher College, Stephan Harding sets out the importance of walking:

When you hear about the history of the Earth while you're walking, then you really start to experience a felt, bodily understanding of how ancient the Earth is. Instead of just being an intellectual concept, it becomes a full-body experience in which your mind, senses, feelings, and intuition are engaged (Mowe, 2017).

Engagement with the senses enables development of tacit knowledge – that which can't be conveyed verbally or instructionally (Polanyi, 1983). Though the *Deep Time Walk* audio narrative is brimming with complex, detailed information, it is the physical act of walking that conveys an embodied sense of perspective and scale. Or, more accurately, it is the combination of these that is important. This felt sense of scale (and of connection and entanglement) is not something that can be fully conveyed through verbal explanation: it must be experienced bodily.

To convey the vast scales of deep time that elude straightforward conception, geologists often employ metaphors, the most familiar of which include comparison of geological time to a calendar year, or a 24-hour clock. In the former, anatomically modern humans appear at approximately 23:48 on New Year's Eve; in the latter, at 23:59:59. These metaphors function because they are grounded in bodily proprioception, on previous sensory input that provides a solid reference point (Lakoff and Johnson, 1980). It is the deliberate and explicit emphasis on the sensory aspects of the work, as well as the intellectual dimension, that differentiate the *Deep Time Walk* from these other conceptions of deep time. Indeed, research by Jones and Taylor (2008) suggests that experiences involving physical movement are particularly powerful for developing an understanding of scale. They also point to the use of the body as a measuring device to provide reference points when apprehending scale. The *Deep Time Walk* draws upon both ideas. Deep time becomes converted into physical effort, motion and distance. Through proprioception, deep time becomes a memory in the body of the walker.

Walking allows us to come into more intimate contact with an environment: it is a far slower, more exposed option than many of our contemporary mobility choices. The narrators of the *Deep Time Walk* encourage the listener to pause, to observe their surroundings: their steady tones encourage a meditative pace, a deliberate, ponderous movement. This manner of walking – as opposed to that which functions purely as transit from one point to another – is what Ingold (2015) terms *attentional* rather than intentional, characterised by attunement and responsiveness. The rhythm and flow of this walking, suggests Edensor (2010, p.78), begins to reveal the relationalities between body, materiality and space in the complex ways it “folds body, self, other humans and

nonhumans, time-space and place together”. Walking attentively through a landscape begins to illuminate our embodiment.

6.1.3 Mediation through mobile technology

As Woodford clarifies, the motivation behind developing the mobile app was to “take a very powerful experience and make it available to anyone via a smartphone” (Interview with Woodford, 7 December 2018). Conversion to mobile digital media extends the reach of the experience in two ways. Firstly, it removes geographical restrictions and the need for an experienced guide or physical information boards. The recorded narrative and relative locative audio playback are intended to ensure that a listener receives the appropriate content at the relevant distance points during their walk. The developers of the *Deep Time Walk* made a deliberate decision to avoid using GPS or similar tracking mechanisms, and instead employ the pedometer and an approximation of the walker’s height to personalise the auditory experience. This unlocks the potential for *any* landscape to be inscribed with the scales and relativity of deep time. Whilst Farman (2014, p.6) suggests that storytelling with mobile media offers “an almost infinite number of stories that can be layered onto a single site”, the *Deep Time Walk* offers a single story that can be layered onto an almost infinite number of sites.

Secondly, as an app the *Deep Time Walk* has a presence in the mobile app marketplace, available for download by any individual in possession of a smartphone. At the end of 2018, the app had been downloaded approximately 2,500 times (Interview with Woodford, 7 December 2018). The lack of in-app tracking mechanisms means that usage data is not available beyond this figure. Though this volume may be quite modest relative to some of the most-used apps on the market, this is almost certainly a larger number of interactions than the team may have achieved offline. However, presence on the mobile app marketplace also allows for user reviews to be shared. I include some recent reviews below:

Great app, brilliant way of demonstrating the scale of Earths history while giving a different focus to a walk. Whole family loved it, especially needed during lockdown! I never leave reviews, but this deserves praise (dave tonkin smith, 12 July 2020, Google Play)

This app is phenomenal. It made me cry like a baby. How don’t more people know about it?! (bajcoela, 1 July 2020, App Store)

I love this app! Best walking app yet! It is filled with information about Earth’s history. I would love to see another app similar to this one. My suggestion would be to create a second app that explains those last 1,000,000 years in more detail. (22 May 2020, App Store)

Like these, most of the app reviews and ratings, which sum a total of 57 across the two platforms (as of November 2020), are extremely positive.

There is, however, a hint of paradox in the chosen format of the *Deep Time Walk* – a mobile smartphone app – and the developers’ desire for “technology to take a backseat whilst the experience of Earth history comes into the foreground” (Interview with Woodford, 7 December 2018). During the introductory narrative of the *Deep Time Walk*, the listener is encouraged to stash their digital device in a pocket or similar. Like some of the projects featured in Farman's (2014, p.5) edited collection, the *Deep Time Walk* takes the mobile “out of the realm of the everyday and insert[s] it into practices that reimagine our relationship to technology, place, and our own sense of self in the spaces through which we move”. However, inviting people to reimagine the way in which they use their mobile technology – asking them to keep it in the background – presents a significant challenge. It also opens up the potential for technical glitches, which becomes evident through conversation with participants. I explore this further in a later section of this chapter.

6.1.4 Within a constellation of work

Here I will briefly locate the *Deep Time Walk* amongst a handful of other works to which it relates along different axes, in order to provide some contextualisation. These axes include deep time as subject of exploration, the use of sound to evoke broader connection, and walking as a pedagogic and engagement tool. My aim is not to draw comparisons with and amongst these works, but to make observations that enhance our understanding of the *Deep Time Walk* as a creative venture. Whilst I have encountered two of these works myself (*The Oldest Living Things in the World* (Sussman, 2018) and *Mudlark Walks: Flotsam Talisman* (H-W, 2018)), the remaining have been outlined by drawing on descriptions, accounts and analyses available in the public realm.

The Oldest Living Things in the World (2014) is an art-science research and photography project by Rachel Sussman. She spent a decade travelling the world to locate and photograph continuously living organisms 2,000 years old and older. Her work is documented in an exhibition and published book, showcasing her portraits of these ancient beings. The organisms featured include 2,000 year old brain coral in Tobago, Arctic map lichen that grows at a rate of 1 centimetre every 100 years, a 80,000 year old colony of aspen trees in Utah, and Australian stromatolites which also make an appearance in the *Deep Time Walk*. The term ‘portrait’ is a deliberate one. As Sussman (n.d.) writes:

I approach my subjects as individuals of whom I'm making portraits in order to facilitate an anthropomorphic connection to a deep timescale otherwise too physiologically challenging for our brain to internalize.

Sussman draws attention to the gulf between the shallowness of human timescales and the depth of geological timescales while simultaneously making attempts to span that gap of difference. It is her artistic, specifically compositional, choices that are intended to operate as a bridge from one temporal frame to another.

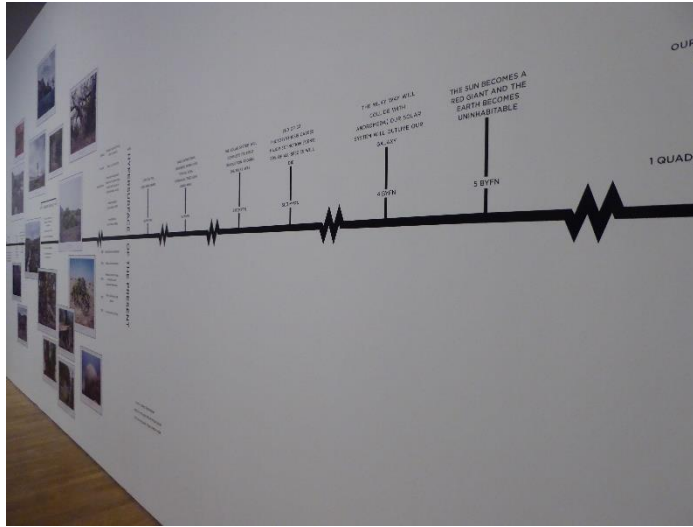


Figure 6.2: *The Oldest Living Things in the World* (Sussman, 2018) at Modern Art Oxford

I encountered *The Oldest Living Things in the World* at Modern Art Oxford, where it featured as part of their 2018 exhibition, 'Future Knowledge' (Figure 6.2). The use of the portrait style both brought into focus the dissimilarities of these beings with the human and hinted at a distant relationship. However, Sussman's decision to collapse sections of the timeline limited the sense of scale.

The *Longplayer* shifts our temporal perspective in the opposite direction. Devised by Jem Finer, the *Longplayer* is a self-extending composition of Tibetan singing bowls which began on 1 January 2000 and will continue without repetition until 2999 (Figure 6.3). A continuous broadcast of the thousand-year composition can be accessed online or through a series of public listening posts, one of which is located amongst the trees in the Yorkshire Sculpture Park. The composition of the piece mirrors a planetary system: six short musical pieces, the orbits of which come into alignment only once every millennium. It is a cultural exploration of both space and time. In its attempt to make tangible the span of one thousand years, it raises questions of stewardship, absence, and technological obsolescence. Though currently performed by computers, its design

required the consideration of how to adapt to unforeseeable developments in both the technological and social realms. It is not tied to any particular form of technology. The Longplayer Trust was established as a “lineage of present and future custodians invested with the responsibility to research and implement strategies for *Longplayer*’s survival” (The Longplayer Trust, n.d.).



Figure 6.3: *Longplayer*’s first live performance, The Roundhouse, 2009. Photo © Atherton-Chiellino

Though there is a rich archive of walking art to draw upon within which the artist is walker (of which Richard Long may be the most familiar), my focus here is on art projects that invite an audience to do the walking. *Energy Walk* (2014) emerged out of a research project at IT University of Copenhagen exploring the impact and effects of renewable energy initiatives (Figure 6.4). The choreographed, digitally guided walk around the harbour area of Hanstholm in Denmark, narrates stories of “the manifold forms of energy and infrastructure woven into this place” (Thorsen, 2016, p.142). Carrying a wooden digital walking stick crafted specifically for this work, into which is integrated an audio player and headphones, the walker makes their way past six waypoints. These waypoints are marked by posts which, when touched with the walking stick, activate the next audio chapter. It sensitises a walker, guiding them through tensions “knowing and not-knowing, seeing and not-seeing, the energy topographies of Hanstholm harbour” (Thorsen, 2016, p.146), intending to make the landscape available in new ways.



Figure 6.4: Encountering a waypoint on the *Energy Walk*. Photo © GeekPhysical

On encountering *A Mile in My Shoes* (2015) by the Empathy Museum, visitors are invited, quite literally, to walk a mile in someone else's shoes (Figure 6.5). Each pair is matched with an audio device and headphones, through which a visitor may listen to the story of their previous owner whilst walking a short distance with the shoes of a stranger on their feet. From stilettos to sandals, waders to clogs, these shoes have belonged to a colourful array of individuals. Amongst the 200 storytellers, and previous owners of the shoes, are a Syrian refugee, a drag queen, a war veteran and a neurosurgeon. This is both a physical and empathic journey. *A Mile in My Shoes* explores “how storytelling can transform our personal relationships and help tackle challenges such as prejudice and conflict through the power of empathy” (Patey, n.d.). Empathy is acknowledged as an embodied act. The intimacy of wearing the shoes of a stranger and hearing their voice in your head leaves a feeling as if having gone on an extended journey alongside them. Walking engages empathy as an active, rather than passive, state.



Figure 6.5: Walking *A Mile in My Shoes*. Photo © Andy Burton

Mudlark Walks: Flotsam Talismans (H-W, 2018) blends audio narrative, recorded instruction and live demonstration to share unexplored histories of the Thames, reflect on present day challenges and venture into imagined futures of London. Walkers began the site-specific walk along the River Thames in a group, led by the artist, listening to an audio recording through their headphones (Figure 6.6). The artist occasionally supplemented the content with live demonstration, pointing out referenced landmarks and presenting previous mudlarking discoveries. Once down on the riverbank, walkers separated out of the group, making their own way along the waterline, guided by the narrator through a process of observing and gathering items washed up on the banks of the Thames. The narrator encouraged us to collect one item of each material: wood, metal, clay, bone and plastic. We proceeded eagle-eyed, scanning the littering of the bank for specified ‘treasures’, as the audio landscape on our headphones encouraged a reflection on “personal, local and environmental tides, shifts and changes within and around us” (Thames Festival Trust, n.d.). Connecting to the locality through objects, we began to embody the flux and flow of a place through time. The journey culminated in the crafting of a talisman: an enduring connection in a hybrid materiality. This journey of active engagement and reflection demarcates the relationship between the walker and this particular landscape.



Figure 6.6: Participants taking part in *Mudlark Walks: Flotsam Talismans*

6.2 *Deep Time Walk* for this study

The decision to feature the *Deep Time Walk* as a case study in this research was made in early 2018. Its mobile nature and broad accessibility online positioned the work well in terms of opening up to a geographically diverse audience and removing limitations of specific event dates and times. I played with the idea of identifying a specific route for participants to walk, perhaps even to convene a particular day on which I could ask people to walk that route. But I came to see these as unnecessary barriers to participation and set them aside. Participants would be able to select where and when they experienced the walk. As this was before the *Deep Time Walk* joined the ‘gift economy’, there remained a cost barrier which, though low, was overcome by offering full reimbursement of the £2.49 on the completion of a research conversation.

Participants were recruited through a variety of channels. Posts I shared on twitter were reposted by some of my connections, and then onwards again from there, extending the sphere of reach significantly. A call for participants also appeared in social media posts from *Deep Time Walk C.I.C.* itself. Posters were displayed across the University of Leeds campus, and an advert was featured as part of *Season for Change* programme online and through social channels. Together, the reach of these was quite extensive geographically – I was contacted by individuals from as far afield as South Korea. However, the group of participants that came to feature in this study is somewhat more locally representative. A number from Leeds, some from elsewhere in Yorkshire, and then a handful in other areas of the UK. One outlier is based in Mumbai (though hails from London).

Despite the array of promotional routes, I must reflect on the audience that was reached. There is a very close alignment between my twitter account, that of Deep Time Walk C.I.C. and *Season for Change*: our locus of interest falls at the intersection of art, environment and positive action. This is an opt-in experience and appeals to a particular subset of people. It is unlikely that an individual who doesn't enjoy walking or have an existing interest in the natural world and its history would choose to engage with this experience. Indeed, it is likely that they may never come across it. In the case of this study, some people outside of this audience did engage with it, but for the specific purpose of my research project.

6.2.1 My encounter with the *Deep Time Walk*

I decided to do my own *Deep Time Walk* on a fresh, sunny December morning. I downloaded the app, wrestled on my walking boots, and packed some hiking essentials into a backpack. As I closed my front door behind me, I hit the 'Start' button displayed on the screen of my smartphone, above an image of the Earth from space, and a colourful futuristic-looking logo. Instructed by the narrator, in deep Received Pronunciation, I connected my headphones to my mobile and entered my height into the app, before listening to the introduction. This established the tone of the narrative, introducing the Scientist and the Fool, inviting me to join them on their walk through deep time.

I was immediately struck by the way in which these characters communicate. The opening monologue from the Scientist is poetic, weighty and dramatic. It conjured up images in my mind of a large traditional theatre stage: it smacked of Shakespeare. I was aware that one of the co-writers of the script is a playwright specialising in verse drama and was the first writer in residence at Shakespeare's Globe. So, though this style of dialogue didn't come as a complete surprise, it did evoke a particular response. I realised that this narrative would demand a certain kind of attention from me, as has always been the case with Shakespeare: a more deliberate, focused attention, whether reading, listening, or watching. Later, I discovered that the script is indeed written in verse, as shown in Figure 6.7 below which features the opening monologue from the Scientist.

*SCIENTIST. Stuck. I am stuck.
 Every inch I move I wreck
 the ground under my feet.
 I have turned into a giant,
 my breath poisons the air
 my touch plastics the sea,
 my explorations cause mass extinctions,
 my inventions exhaust all mines,
 my electric brain's immense calculations
 only confirm the wreck I am creating.
 If I discover a tribe, it dies,
 if I find a new flower, it is the last one.
 I have turned into a monster,
 a dragon, a goblin eating children -
 where can I walk without trampling
 innumerable tiny lives
 that my life relies on?
 Where can I go,
 where can I turn for wisdom,
 everything turns away from me, in silence,
 in terror and despair flees from me.
 There must be something, something to change me back into myself.*

Figure 6.7: Extract from the *Deep Time Walk* script (Deep Time Walk C.I.C 2019)

Adjusting my attention accordingly, I began walking a route through the local woodlands, briefly into suburbia, then back through the woods. At once, I was overwhelmed by a density of information describing the rush of dust and gas that clumps together as a ball of molten rock: the beginnings of our Earth 4,600 million years ago. This density did not subside, and it became difficult to absorb all the detail, particularly as I was trying to pick it out of the verse. Though I studied biology at A level (approximately 15 years ago), I lost track of the narrative at points because this is not a familiar story. I mused on this thought: how little I know this narrative, yet I can recount the creation story of Genesis with a fairly good degree of accuracy, despite stepping away from Christianity decades ago. I became bewildered by the archaea, the supercontinents and the various forms of photosynthesis. Whereas with a podcast I might pause and rewind when I miss some detail, it didn't feel appropriate in this context. I just had to accept that I was missing a significant amount of the detail.

Soon after starting the walk I realised that I was covering more distance than the app was covering in its narrative. When it announced that we had reached the point of 4,200 million years ago, I had covered a distance far beyond 400 metres. I became distracted by this, glancing often at my phone and attempting to work out why this might be the case. After a while I resigned myself to it and decided that I can just skip ahead at some point later on. It is only at the halfway point, when I had walked at least double the intended 2.3 kilometres, that I discovered a solution: keeping my mobile phone screen display on (rather than turning it to standby) ensured a far a more accurate matching of the narrative to the physical distance I had covered. This initial mismatch of narrative

and distance distorted the scale of my walk, and in theory negated the central feature of this experience: the transposition of time onto distance. This kept pulling me back into the digital realm, away from the spatio-temporal sphere of the narrative and my immediate surroundings. I was simultaneously here and there.

Though peppered with technological difficulties, I completed the walk accompanied by a sense of awe, responding to the perspective-shift which was at once both bewildering and grounding. Though I struggled to grasp all the informational intricacies of the narrative and at points my mind wandered to observe the various fungi populating tree stumps and the long-tailed tits skipping through the trees, an overall sense of wonder emerged through the detail. I had been invited to confront the vastness of time that I had never looked at directly before.

6.3 Research conversations

Over the course of two months I had conversations with 14 people about their *Deep Time Walk* experiences, all of whom did the walk specifically for this research project. All participants were contacted approximately four weeks following the initial conversation, and again at six months, with questions concerning their memories of the encounter and the ways in which their consideration of the work may have developed. Conversations were conducted either in person or remotely, lasting between 20 and 60 minutes. Some participants shared their thoughts via email at the one month and six-month milestones (or thereabouts). The discussion in the remainder of the chapter draws upon the diversity of responses, offering an elucidation of central themes emerging from encounters with the *Deep Time Walk*, tying in relevant literatures where appropriate.

I begin by exploring how participants were left with an altered sense of perspective and the consequences of such an alteration. Then I unpick how the narrative, landscape and the walker themselves interact to produce the full experience of the *Deep Time Walk*. I discuss the importance of points of connection and reflect upon the differing responses to the physical aspect of the experience. I then draw out the various ways that participants paid attention to the work, whether focusing on detail or an overall sense of the whole experience. I conclude by reflecting on the solitary nature of the experiences and highlighting examples of the legacy that experiences with the work may have.

6.3.1 Locating the human

Along the 4.6 kilometres of the walk, humanity appears just 20 centimetres before the end of the journey. Perhaps surprisingly, considering its presence in this study, very

little time is spent dwelling on the destructive impact that characterises the Anthropocene. The creators of the *Deep Time Walk* intend this experience to draw attention to the extensive history of which humanity is just a part, locating the human within an ecological realm through the concept of deep time. Helen considered this to be the core value of the app, and she introduced the epochal label unprompted:

Just the sort of, to get that context of where, you know, the Anthropocene fits in the arc of geologic time. And if you take that long perspective, just how short it is, just what a small factor it is.

Humanity becomes one of numerous phases of the planet, no more or less remarkable than any of the others. This challenges the anthropocentrism which has underpinned an exploitation of nature and characterised the Anthropocene (Plumwood, 2002).

This relocating of the human (and the self) amidst the ranks of all worldly beings, as a move away from the centre, offers Andy a comforting sense of insignificance:

It introduced a sense of perspective on everything. Made my life even more meaningless than I thought it was [laughter]. Actually, to be honest, it's a comfort as far as I'm concerned. ... I think it's always worth being reminded of that, you know just because when life gets tough you can say well you know, compared with, you know, I'm just a little speck on a speck in a vast universe. And that actually does give me a great deal of comfort.

In the context of deep time, Andy's concerns no longer appear so urgent. Amongst the slow, continuous geological processes of the Earth, the challenges and anxieties of daily life appear negligible.

Yet this insignificance – a decentred humanity – may compromise our ontological security. Amanda draws a comparison with Galileo's heliocentrism, pointing to the threat of acknowledging deep time:

Those things are very, very threatening aren't they because they destabilise what we believe is true. So the politics of it was basically saying 'I think you're *not* the centre of the world, there's something else that's going on.' And it was also saying, 'you came from slime, you can go back to slime' I think. And Gaia won't care. Because you're not the thing that's keeping the oxygen going and keeping the atmosphere stable.

Locating humanity in deep time contextualises the existence of our species as one fleeting moment on a vast temporal span, an insignificance that can be easily removed. This upends our usual configuration of our reality which is necessarily anchored to our own being. These two – an epistemic grounding within the scale of human time, and the decentring vastness of deep time – are in contention: it is a struggle to know these simultaneously without conceptual disruption. As I outlined in Chapter 2, this insignificance is just one of two opposing effects of locating humanity in deep time:

humanity appears as an insignificant instant, or a dominating geological force with a might far beyond its years. Andy articulates the trade-off between geological force and geological insignificance:

I suppose my personal belief is you have to balance off all the time the absolutely fundamental importance of me as a human, as a sentient being – because actually I am all I’ve got – with the knowledge that I’m pretty fucking irrelevant, you know? And those two things I have to kind of balance off all the time.

This polarity is interesting in the context of the *Deep Time Walk*.

There is a tension between the immediate concerns of the day-to-day versus the bigger geological picture. The *Deep Time Walk* demands that we split our attention across these scales. Whilst Andy escaped from the weight of daily concerns into deep time, Harry reported experiencing difficulty focussing on scales so far removed from our lived experience in the here and now:

I hadn’t really escaped real life I suppose because I’m thinking ‘how long is this going to take?’

Concerns of daily life were always present in Harry’s consciousness, interjecting in the narrative. As Giddens (2011, p.3) explains, splitting attention across temporal scales presents a significant challenge, whether it be thinking back into far reaches of geological history or forwards toward potential futures, as “even the most sophisticated and determined environmentalist struggles with the fact that, under the shadow of future cataclysm, there is a life to be lived within the constraints of the here-and-now.”

Further, this relocating of the human led participants to reflect on the idea of extinction.¹⁸ Francesca spoke about the series of mass extinctions that occurred in the history of the Earth, and the possibility of this occurring again was one she found novel:

At the end it then kind of talked about the humans and what we’re doing to the planet and mother nature could just decide ‘we’ll just have another restart’ [laughter]. That was kind of interesting, interesting thought at the end [laughter].

¹⁸ These research conversations were conducted in early autumn 2018, just prior to the public emergence of Extinction Rebellion, and before a narrative of crisis and emergency swept the pages and screens of the media and entered everyday rhetoric. The notion of extinction was, however, one that arose often in reflections on the *Deep Time Walk*.

I am struck by the dissonance here, between the words and the laughter. A similar lightness of tone was often present in a number of other conversations whilst discussing subjects that have deeply profound implications.

Catherine touched on similarly existential themes, though a note of justice accompanies the notion of human demise:

If we change the Earth in the way that we are doing, the net result is that *we* are going to be wiped out, the Earth will wipe us out ... for me the message I take away is well we don't actually deserve to survive because we're being really stupid, and our consciousness is not anywhere near where it needs to be. And, yeah just, for me it's a whole allegory of how we need to take care of the Earth, and if we don't, she will take care of us.

Here, Catherine points to a relationship of guardianship and protection; humanity as the steward of a precious nature. Yet her statement also introduces the idea of reciprocity. Disregard for the equilibrium of this relationship will result in a rebalancing or – if we consider nonhuman nature to possess agency – in retribution.

For Jessica, the idea that humanity would disappear even offered solace:

And one sentence in the text that really stuck with me is when she says 'if humanity is harming the planet and she self-regulates, then that might mean removing humanity'. Which I thought was comforting in a way, like [laughter] 'ok that's good news'. It was a very powerful thing. And because it's put in the context of this, there has been *all* this before we showed up, you really believe it in that moment, you're like 'yeah, obviously we're not going to be trouble to remove'.

In the face of such an extensive timeline, human extinction is of little concern. The acceptance, and even approval, that pervades Jessica's words about human extinction could be considered antithetical to the intention behind the work. Woodford suggests that the experience was designed to "invoke a kind of, a reaction or an emotion or an experience that then we hope will drive people towards change" (Interview with Woodford, 7 December 2018). Yet Jessica's statement is one of relief, and we might question the extent to which this can be a driver of active change. Such relief risks diluting, or even negating, an urgency to adjust the current trajectory of the Anthropocene.

6.3.2 Interplay of narrative, landscape, and walker

The physical surroundings of the walk play a role in shaping the ambience of the experience. Catherine did the walk twice, in two different locations: one rural, one urban. Her walk through a rural Bavarian landscape evoked feelings of awe and wonder.

The following quote illuminates the very different tone of her experience in an urban landscape:

In an urban environment, it all felt just a little bit hopeless and like I was walking towards the end of humanity that was rather more frightening. And far less romantic.

The character of Catherine's experience is contingent on her environment. She spoke of the rural landscape as "uninterrupted by humans", portraying the expansion of humanity and civilisation as an unwelcome interference. Despite the notion of the 'countryside' being itself a human construction, in such surroundings the narration through deep time drew attention to the enduring beauty of the environment, highlighting the ancient origins of humanity. In urban surroundings, this narration mapped a trajectory towards a present of destructive interference and dread.

This interaction of landscape and narrative also functions in reverse: the narrative of the *Deep Time Walk* serves to illuminate aspects of the walking environment, directing attention to features otherwise unnoticed. Several participants who chose to walk familiar routes reported that listening to the *Deep Time Walk* shed light on their surroundings in novel ways. These examples demonstrate what Bull (2001, p.180) terms the "aural reconfiguration of experience". Laura's experience is an exceptional case of this reconfiguration, suggesting an affective, almost synaesthetic, manifestation of the soundscape:

I could almost feel myself in that kind of primordial soup [laughter], and I think the sounds helped quite a lot with that ... And I don't know if it was because I was by the sea, but I kind of felt like I was, like on the molten surface. Very weird. It was like I was sort of walking along in this CGI weird experience, I was walking on this sort of molten, not pure water, but like rock as it's sort of forming.

An imbrication of soundscape and surrounding landscape offered an immersive experience: Laura could *feel* herself walking through the scene described in the narrative. Likewise, Amanda had a sense that she was in an environment created by the audio itself, that "the whole thing was designed such that you would be in that world."

Harry described one particular moment that illustrates how the audio explicitly directs attention, inviting the walker to stop and observe their surroundings:

There was a point where I was just sort listening really quite carefully. And it was saying 'look around at the sky' and stuff. And because the sun was coming through the trees at this one point, I looked up, and I was looking up at the trees but because it told me to pause, and all these insects, were quite high up above the trees, and they seemed to really chime with what was being spoken about in the app. All these insects that you'd never notice otherwise.

The narrative encouraged a noticing that leads to both the place, and the specific experience, becoming meaningful in new ways. This instance endured in Harry's memory and was referred to in our subsequent conversation some weeks later:

I really remember that stream bed and I really remember the, looking up at the sky and the trees and the angle of light and all of these insects flying around in the sky. And I remember that because I was listening to that narrative at the time. So that's quite nice, that's quite precious really isn't it? It just makes you think about things, observe things, kind of pause and notice things that you would otherwise not notice I think.

The narrative, suggested Harry, has changed his relationship with the landscape through which he walked: he now sees and experiences it differently. It is a form of emplacement: a particular locating of the self within an environment, established through a more deliberate attention, facilitated by the narrative. The *Deep Time Walk*, Harry suggested, "kind of magnified something about that place that it wouldn't have had imprinted on it before".

Similarly, Catherine expressed surprise at the way in which the narrative facilitated new lines of thought and reflection within a very familiar landscape:

It's surprising that it did make me reflect, given that I'm blessed by being able to walk these paths over and over again. And that's a testament to the story in that, if I'd taken a unique walk, and I'd felt those things, you might be able to put it down to being that kind of spiritual being at one with the Alps or whatever.

She was moved to take photographs of the landscape and shared them with me when we spoke (Figure 6.8). Andy also shared photographs, unbidden by me (Figure 6.9).



Figure 6.8: Image from Catherine of her *Deep Time Walk* in Bavaria



Figure 6.9: A image from Andy of his *Deep Time Walk* through the Yorkshire Dales

As well as infusing a locale with new meaning, the *Deep Time Walk* also facilitated broader shifts in perception. The information within the narrative provoked a reflection on existing understandings of the world as a whole. Elizabeth outlined how this experience added to information she already possessed, like ‘layers’:

I think it kind of consolidated some of my learning from previous, probably from audio books. ... I think that its just kind of like layers. I’ll kind of learn, I’ll kind of learn something about one topic from some source and a couple of years later I’ll revisit it in another way and so on.

New information is put together with old, enabling new appreciations. Referring specifically to her A level chemistry, Catherine remarked that “having it in those terms was definitely new. Definitely things that I hadn’t put together in that way before.” The *Deep Time Walk* has enabled connections to be made between hitherto unconnected ideas.

Presented together, learnings that may have been previously discrete now coalesce within the context of the deep time narrative. In turn, these reflect back upon the walking environment. Marie remarks upon the newly highlighted connections, and the accompanying existential implications:

It just makes you perceive what’s around you in a different way I think. I mean even though, yes I knew that we have life on Earth and we don’t know any other planet where there is life at the moment, and some basic things about, yes water is important and oxygen is important, but I wasn’t sort of aware of some of the connections between these things and sort of how, I think the sense of, you know, what a massive coincidence this might have been.

This new framework, or what Bjornerud (2018) calls a ‘geological looking’, brings previously unseen patterns to the foreground. It “enchants the world with layers of meaning and enchants the way we perceive our place in it” (Bjornerud, 2018, p.18).

6.3.3 Visuality and points of connection

Despite Jessica’s description of deep time as “impossible to visualise”, visuality was a prominent aspect of some experiences relayed in these research conversations. For Tasha, the narrative conjured vivid images in the imagination:

I have kind of visual memories of the experience, even though I wasn’t being shown any physical pictures.

Amanda’s mental imagery was influenced by various cultural reference points:

I experienced it in colour, while I think back about it. That the colour started off very dark and black and then moved to become multifaceted and colourful ... it’s taking you through from slime to homo sapiens, you know. So you’re also absorbing lots of other things that have come from cultural artefacts, whether it’s *Jurassic Park*, whether it’s the Ladybird book of the start of the start of the world or whatever it is, those things come quite deep, so you’re going to be thinking in dark green and brown and grey and that.

Amanda’s personal archive quite literally colours her mental imagery that accompanies the walk, an intertextual interpretation. Deep time imagery that appears through the cultural landscape will shape our ideas of the Earth prior to the Anthropocene. As Rudwick (1992, pp.vii-viii) argues, these types of images are based on very fragmentary evidence “fleshed out with a complex network of theoretical inferences”. They are a product of particular social and historical circumstances, modelled on a tradition of distinct geological artistry.

For Laura, a visualisation of the deep time landscape came into being once a familiar object – the stromatolite - was introduced. A solid anchor point of visual familiarity was necessary to formulate such images:

So the bacteria kind of rock thing that are actually, people see them in western Australia, can’t remember what they’re called – stromolites or something. It was funny because I think I because I’ve seen them I could place, I was like ‘oh, yeah ok’ and the world shifted in what I was seeing in my head ... Somehow the music put me into this like computer graphic image of what was happening and then swapped out when I knew what they were talking about. Which is interesting as well when you realise how you imagine something and at what point it becomes more like reality I guess.

Before the narrative introduced this point of reference, Laura’s mental picture that she constructed alongside the audio commentary was very obviously imaginary, a fabricated

scene. When this point of reference appears, the mental image is subsequently underpinned by prior experience, her personal archive.

Familiar references anchor us in this narrative, within which little else is recognisable. Daisy struggled to engage with the content that she was unable to picture:

There was bits about all the bacteria I think that I was just like ‘I’m not interested’... I think cos I just couldn’t visualise it, I think that’s why for me.

Both Daisy and Francesca suggested that the experience would have been enhanced for them if there had been visual representations offered alongside the audio narrative.¹⁹ For Daisy, this was particularly the case with regards the earlier, more abstract, guises of the Earth:

But the things at the very, very beginning, it’s like, well, what would’ve that looked like? And the land, what would’ve that looked like? Because you can imagine it to an extent but it’s like, kind of felt like it would’ve been nice to have like a little bit of imagery.

For Daisy, the possibility of establishing a mental image is linked to her level of interest: “the bits that I could imagine I found more interesting I think than the bits that I couldn’t.” We are situated beings, with a particular frame of reference that we draw upon to make sense of our experience. How a story resonates with us is influenced by our personal archive and cultural context and it is impossible, suggests Plumwood (2002), for us to avoid this kind of human epistemic locatedness. But we must be careful not to necessarily conflate this with an anthropocentrism.

6.3.4 A felt sense of scale

As discussed above, deep time involves scales that challenge our cognitive abilities. The struggle to grasp the extent of this timeline was expressed by several participants, including Marie:

It is just really hard to imagine this life of the Earth and also because these fantastically long timeframes. Like ok, four thousand, six hundred *million* years – I can’t, I can’t imagine, it’s just out of my horizon of imagination somehow.

Attempting to comprehend the immense swathes of time that span back to the formation of the Earth is a challenge to our intellect. There exists, suggests Trend (2001, p.301), a ‘threshold effect’ as the spans of “hundreds of millennia and millions of years takes us

¹⁹ The developers of the *Deep Time Walk* have since created highly visual ‘Strata Cards’ to offer imagery alongside the audio walk, acknowledging the different ways and environments in which learning occurs.

well beyond the scope of direct human experience.” Instead, we turn to metaphor, or figures with extended chains of zeros. Yet metaphor is necessarily grounded in our bodily experience, and many conversations revealed how the physicality of the experience led to a greater appreciation of deep time.

Catherine considers how the *Deep Time Walk* compares to alternative formulations of this vast timeline:

One of the things I think that’s important is the physicality of walking. In that, a pedagogical teaching tool in history would be to do a timeline, right?... And, ultimately a timeline, it just doesn’t, it doesn’t convey it the way that walking five kilometres does.

Though walking through a landscape enables a much more extended representation of the timeline, and a clearer illustration of the relative scales than a classroom wall, it is the bodily motion that Catherine stresses is key. The ambulatory dimension of the *Deep Time Walk* works with tacit, rather than explicit, knowledge registers, conveying a sense of scale not possible through language. Attempts to codify deep time in verbal summaries or represent it on a timeline collapse the durations involved, as with Sussman’s timeline for *The Oldest Living Things in the World* (2014). Physical, sensory and bodily experience is the only route to access this sense of scale.

Grasping the extent of the timeline in this way had a profound impact on some of the participants. For Marie, it was “really quite mind-boggling” and Andy shared that it “*makes you realise* what a small part of a big story you are”. This shift in sense of scale challenges our existing understanding of the world, and where humanity is placed within its history. For Jessica, this was very emotionally affective:

It was like an hour in and I was still at the bacteria and I was like ‘god!’ you know? [laughter] ‘ok so very little has happened yet’ but I could really kind of feel I had walked long. And then suddenly I realised ‘wait, I can see the end, I have 200 metres to go, I can see the end and we haven’t even, nothing has happened yet’ and my mind started getting blown at that point. And so I finished it and then I cried.

And this is an experience that Jessica believes will persist in her memory because of its physicality:

I think when you experience something in the body, it’s always much more profound because you know, you can’t lose that feeling. I mean, I still have with me the feeling of how long I walked before multicellular organisms appeared, you know I get startled every time I remember that. So, it’s a much more connected way of experiencing it, it’s not abstract, it’s not abstract, it becomes real.

Here, walking allows for a visceral grasp of something, a kinaesthetic sense, beyond an abstracted, intellectual understanding. Corporeal ways of knowing, suggest Pink et al. (2010), hold a significance beyond those offered through written representations.

However, some participants became frustrated with the (quite literally) measured pace of the experience. An extended tempo and the matching of narrative to walking distance result in frequent intervals without narrative: the informational flow is not constant (though the soundscape continues). Daisy spoke about her impatience for information:

I listened to the information and the talks. But then when as soon as they finished, instead of waiting and walking, and that was the whole part of it, I would just skip to the next bit, and skip to the next bit until, yeah I guess, I feel like I was impatient, I wanted more information, I didn't want to wait.

Similarly, Daniel expressed frustration at “waiting for things to come along”. Whilst several participants appreciated the physical dimension of the *Deep Time Walk* – Harry was clear that he would have enjoyed the content much less had it been delivered in a lecture hall – it does not appear to add anything to the experiences of Daniel and Daisy. Indeed, both participants suggest that watching a video of the timeline may have been preferable rather than listening to a narrative whilst walking.

6.3.5 Essence, detail, and attention

The *Deep Time Walk* narrative is dense with description. Concerned that she wouldn't remember all the detail, Marie began to take notes. However, she eventually considered this unnecessary:

The very little details about how all these different little things are called, you know bacteria that evolved and this and that, I don't necessarily need to remember, I think, to understand the meaning of the app, if that makes sense?

After initially focussing on the technical minutiae of the narrative with a determination to commit this to memory, Marie came to realise that the meaning of the walk emerges through the essence of the experience, rather than through the informational detail. In his treatise on tacit knowledge, Polanyi (1983) takes this idea a step further, suggesting that focus on the particulars of a comprehensive entity risks destroying our conception of that entity itself. Close scrutiny of the detail separates the whole into parts, abstracts information from context.

Attending to the content without effort to retain each minute detail is necessary to grasp a greater sense of scale through the *Deep Time Walk*. Catherine indicates an awareness of this:

I'm not going to remember the names of all those bacteria. And that's not the point of it, that's absolutely not the point of the walk. ... So I set out I guess wanting to pay attention and then realised that actually I didn't need to pay attention, in that same way. What I needed to do was to listen. And to walk in a meditative fashion, and to be reflective.

Adjusting her attention – adopting a meditative demeanour – resulted in what Catherine described as a powerful and insightful experience. As Lavery (2018, p.78) remarks, “counter-intuitively, perhaps, slowing down might actually speed up perception.” Taken-for-granted elements of our environment are illuminated when we notice in this way. What emerges is an apprehension of the experience as a whole, an overall essence rather than the detailed minutiae. In writing about deep time, Bjornerud (2018, p.19) suggests that though we may struggle to fully grasp its immensity, “one can at least develop some feeling for its proportions”. It is this essence that I suggest offers us a sense of these proportions. Amanda summarised this neatly as a form of perception rather than cognition, remarking that she “kind of perceived it more than understood it”, chiming with Polanyi's (1983) assertion that meaning is grasped not by looking at things, but by dwelling in them.

Daniel, however, was focused more on the detail, particularly in terms of the distances he walked. He was frustrated that the distances they suggested you may cover were often not matched exactly in practice: “and so I thought it was hard with this app to really accurately get that concatenation correct.” The accuracy is important for Daniel, where perhaps it was less so for other walkers. For example, both Tasha and Andy reported having to walk considerably further than the intended 4.6km, though neither suggested this hampered their experience. Ultimately, their focus wasn't on the accuracy of the details, but on an overall effect of the experience.

The demands that the *Deep Time Walk* make on our attention – to split it across points in geological history – is challenging. At once, we must be present at the Late Heavy Bombardment 4,200 million years ago, as asteroids pummel the Earth, and grounded in the here-and-now reality of the Anthropocene. In some cases, this resulted in a frustrating sense of distraction. Daisy struggled to attend to both the audio and her walk:

I felt a bit like I wanted to listen to it and I wanted to learn some information but at the same time I was walking and I was a bit distracted, it was hard to kind of do both.

Similarly, Daniel indicates that splitting attention is a challenge for him. He shares this with me seven months after our first conversation:

I don't do well with audio books when I'm driving because my attention to it comes and goes ... I have to focus exclusively on what I'm reading or listening to.

Here Daniel acknowledges the differing capacities for dividing attention across multiple consecutive tasks and sensory input. The physical aspect of the *Deep Time Walk* was not compelling for Daisy and Daniel, becoming a distraction rather than a route to deeper understanding.

6.3.6 Solitariness

Whilst the *Deep Time Walk* attempts to connect the listener to an extensive community of deep historical ancestry, it is simultaneously separating them from an immediate sociality. The experience offered through the digital app is designed for an individual; to be listened to through headphones which establish a particularly private space (Bull, 2001). Amanda suggests that this may have limited her experience:

There's something about experiencing something in community that I felt very cut off from.

Woodford acknowledges that the solitary nature of the experience may act as a barrier, at odds with the long-term vision of the developers. He outlines that:

The long-term vision is to try and really connect people with groups ... that can provide mutual support to one another, where they can fit in and join a movement that's already started (Interview with Woodford, 7 December 2018).

A shared experience, he goes on to suggest, is important in establishing a bond between those in a group, a cohesion and camaraderie which acts as a solid foundation from which individuals may go on to “do the work that they want to do in the world to try and create a just sustainable world” and in further extending this word as transitional arts practice (Neal, 2015).

For Amanda, as for other participants, it was the opportunity to discuss the experience that was lacking. It is the processing of experience through that dialogue became evident in my conversation with Harry:

I suppose I was quite, you know, drawn into it on a level that I didn't really expect until I'd just explained that to you because it was, that was such an abstract thought, but it somehow fitted into this sort of schema about this story that I couldn't make sense of.

Only through conversation did Harry realise the extent to which he had been absorbed in the work. Amanda experienced something similar:

It's been very enjoyable going back to it and having this conversation about it because I realise that I picked up quite a lot of information, some of which reinforced what I already knew, but reminded me.

It was through dialogue and deliberate reflection on their experience that Harry and Amanda came to understand some aspects of their encounter, and the extent of their learning.

6.3.7 Legacy

Considering the intention set out by the developers of the *Deep Time Walk* – to evoke a “profound shift in perspective, awakening us to our magnificent ancestry” (Woodford, 2018) – it is pertinent to explore the potential legacies of the work that emerged from conversations with participants. The developers are mindful to offer a plurality of ‘What Next’ pathways at the end of the walking experience, recognising that people may want to take action in different ways. Woodford explains:

Things like a Transition Town movement is good for a certain demographic, and joining 350 is also good, but some people might want to join Extinction Rebellion, some people might want to lobby their MP, but some people might say ‘well my action is going to be putting solar panels on my roof and I believe in clean energy and still a strong growth potential economically’ (Interview with Woodford, 7 December 2018).

Despite this attempt to offer different forms of agency there was no mention in these research conversations of the ‘What Next’ links offered at the end of the walk. Though this does not imply an absence of concern about the implications of this experience, or how to move beyond it.

Exposure to the scale of deep time and the revised perspective that can accompany it can be overwhelming. It could be easy to become consumed by existential dread and abandon hope. Amanda expressed an uncertainty about how to deal with the experience:

I suppose you wonder about your, well what do you do now, after something like this? What do you do now?

She went on to suggest, echoing other participants, that one course of action “is to recommend it to other people, that kind of sense of dissemination”. These recommendations can be fruitful: six months after our conversation, Jessica reported that her father had done the walk eight times so far and was exploring the threads of science it contains. Andy intended to use the walk as part of a creative workshop he was planning to facilitate.

Woodford (2018) suggests that the impact of the experience develops steadily over time:

I think it’s an experience that has this slow burn to it. You know, it *stays* with people. Suddenly they see time slightly different and the Earth slightly differently.

This assertion is supported by some of my research data. Several participants mention still thinking about their experience a month or more later. It becomes embedded in the personal archive, framing subsequent experience, memories of it triggered by associations. As Harry illustrates several weeks later:

Sometimes when I walk back around there, sometimes I just sort, I connect the kind of thoughts I'm having while I'm walking to that experience of doing it before.

It is a similar scenario for Marie, six weeks after she first experienced the *Deep Time Walk*, as she shared in an email to me:

I guess the main thing for me is that I am still running along the same (or very similar route) in the same woodland at least once a week, and I'd say the time walk makes me feel more connected to this place now as it made me ponder some very fundamental questions there! I often remember the experience when I run there and makes me think how beautiful it is, pretty much regardless of the weather.

This familiar landscape has come to hold a new significance for Marie. For both her and Harry, there continues to be a reciprocity in the way the narrative and the walking environment interact. For these participants, the *Deep Time Walk* is enabling a newly configured connection to place through altered attention: familiar, everyday locations become remarkable, inscribed with new meanings. These examples bring the world into sharp relief as a “space of relationality and as a space for the construction and negotiation of meaning” (Somerville, 2011, pp.2–3).

6.4 Conclusion

I began this chapter with an outline of the *Deep Time Walk* and an exploration of some of its core features, including how it engages with themes of the Anthropocene, the effect of walking and mediation through technology. I then offered some broader context by situating it amongst several other related art works. After a description of my experience I moved on to examine themes that emerged from conversations with participants. The *Deep Time Walk* locates the human within deep time, offering participants a shifted perspective of humanity's significance and, in some cases, their own. This troubled an existing anthropocentrism and highlighted the tension between our dailiness and our place in the vastness of deep time. Several participants were left reflecting on the idea of human extinction.

Accounts of experiences with the *Deep Time Walk* emphasised the interplay of narrative and landscape. The walking environment influenced the tone of the narrative and the narration shed new light on familiar locations. The *Deep Time Walk* also served to

reconfigure existing knowledge about evolution and geological time periods. Though some participants reported having experienced the narrative visually, others were left with a desire for accompanying imagery. Points of connection appear important for engaging with the story of deep time. Whilst many participants expressed the importance of the physical dimension in further grasping a sense of deep time, some found it distracting. These are the same participants that held their focus on the detail of the narrative, whilst others were content with an overall sense of the experience.

The solitary nature of the experience left some walkers feeling as though they were unable to fully digest and reflect upon what occurred. The 'What Next' signposts went unremarked upon. Nonetheless, many were keen to recommend the work to others, indicating the value the *Deep Time Walk* held for them and, in certain cases, there remained a residue of the deep time narrative on the walking landscape.

Chapter 7 Making place in the Anthropocene: a study of the *Time and Tide Bell*

This chapter presents the final case study of this doctoral research: Marcus Vergette's *Time and Tide Bell* (2007). I begin with an overview of the work, introducing its physical form, conceptual origins, and subsequent development. I then locate it within a context of other creative initiatives to which it is connected by different threads: tidal sound art; sculptural pieces that draw attention to tidal rhythms; and interventions that evidence rising sea levels. After offering some further context – including an account of my own experience with the artwork – I move onto the specifics of my enquiry and explore the themes that emerged from my research conversations.

7.1 The *Time and Tide Bell*

The *Time and Tide Bell* (Vergette, 2007) comprises a series of bells positioned at or near the high tide point around the United Kingdom coastline (Figure 7.1). The structure of the bells, conceived and created by sculptor Marcus Vergette, comprises two large bronze castings, one inverted and mounted atop the other, the whole structure measuring 1.6 metres tall when assembled. Sonically, the bell design is unique: Vergette collaborated with physicist and sound designer Neil McLachlan to employ novel computer modelling techniques in designing the bell shape, resulting in a form that rings multiple tones as a melody with just a single strike (Time and Tide Bell Organisation, n.d.).

Each bell is fitted with a 'wave-catcher', enabling the bell to be rung by the motion of the incoming and outgoing tides. The wave-catcher design varies from bell to bell, tailored in response to its intended positioning and local tidal forces. A poetic inscription is featured on each wave-catcher, chosen or composed by the community that hosts the bell. The inscribed wave-catchers have been likened to Tibetan prayer flags: mantras are sent out as the bells are rung by the tide. At the time of writing, there are seven bells installed, at the following locations: Appledore, Devon; Bosta, Isle of Lewis; Trinity Buoy Wharf, London; Aberdyfi, Gwynedd; Cemaes, Anglesey; Morecambe, Lancashire; and Mablethorpe, Lincolnshire. Six further bell installations are currently under development, in Par, Cornwall; Brixham, Devon; Redcar, Yorkshire; Harwich, Essex; Happisburgh, Norfolk; and Ventnor on the Isle of Wight (Time and Tide Bell Organisation, n.d.).



Figure 7.1: The first *Time and Tide Bell*, installed in Appledore, Devon (Vergette, 2007)

Vergette, who is also a farmer, sculpted his first bell at the end of the Foot and Mouth epidemic in 2001 to commemorate the hardship that his community in Devon had to endure at that time. He believes that *My Feet in Earth* (2004) was the UK's first 'public access bell' that can be rung by anyone (Vergette, 2017). Whilst making this bell, Vergette became interested in different bell forms and harmonies, and the potential of using the tide, sowing the seed of what became the first Time and Tide bell, installed in Appledore in 2009. A conversation between Vergette and a friend led to the identification of a site for a second bell at the other end of the British Isles, installed on Bosta beach in the Outer Hebrides in 2010. Later that same year, a third bell became resident at Trinity Buoy Wharf in London, followed swiftly by a fourth in Aberdyfi, Wales. Another Welsh bell was sited in Cemaes – the most northerly town in Wales – in 2014, before the project entered a dormant period, as Vergette decided to focus on other ventures.

Three years later, in 2017, new energy was brought to the project in the shape of Peter Gingold, previously Director of TippingPoint, an organisation focused on stimulating artistic engagement with climate change. Convinced of the yet unmet potential of the work, Gingold established the Time and Tide Bell Organisation as a limited company, and subsequently as a registered charity. The ambition of this venture draws on Vergette's original intention for the project: to celebrate and reinforce connections in local communities, between different parts of the country, between the land and the sea, between us and our environment, illuminating our essential entanglement (Haraway 2016). Gingold and an initial group of trustees were successful in securing a significant grant from the National Lottery Community Fund. This funds three strands of

development to 2022: (i) increasing the number of bells installed, to a minimum of 16; (ii) galvanising and supporting a national network of bell communities; (iii) enhancing public engagement with – and therefore benefit from – the bells (Gingold, 2018). The mainstay of the latter is an education programme which involves supporting schools in the bell communities with outdoor learning activities linked to the curriculum. In 2019 the organisation established a partnership with the Marine Biological Association, and was granted funding by UK Research and Innovation, to explore the potential of citizen science initiatives linked to the bells.²⁰

7.1.1 Anthropocene roots

Vergette is clear that this work emerged from his personal interest in the sound and shape of bells: that no broader intention or conceptual basis sat behind his embarking on the creation of the *Time and Tide Bell*. However, having crafted the original bell, he felt that an object with such complex a sound could somehow reflect our complex relationship to the sea:

The nature of the bell sound, I thought, was both clear enough and ambiguous enough, and had that sense of movement in it, that harmonic movement of a fourth – as you go from the tone of the lower one to the upper one and all that, as the partials interfere – that somehow that kind of connected in some way to our relationship to the sea (Interview with Vergette, 8 January 2020).

Our lives are intertwined with these vast bodies of water, and particularly so for those in coastal communities. The sea connects and divides us, it gives and takes. This entanglement is a reciprocal interaction, and extends to a broader sense of place:

The character of each site, both in the people and their stories and the movement of the water, are directly related to, and are results of, the shape of the land. Although we are shaped by our land, we also shape it (Vergette, 2017, n.p.).

The bells draw attention to this reciprocity, sonifying and evidencing the agency of the sea. The site-specific nature of the work functions as an “epistemological challenge to relocate meaning from within the art object to the contingencies of its context” (Kwon,

²⁰ Citizen science is research partially or entirely carried out by nonprofessional scientists. The project with the Marine Biological Association was developed to use the bells as sites around which to collate records of plant and animal sightings to highlight changes in the areas' wildlife. It is hoped that the information can be used to support conservation and informed management of the special areas in which the bells are situated.

2004, p.12), and reflects the way in which meaning is created through the interaction of sculpture and sea.

In Chapter 2 I suggested that the Anthropocene has been characterised by a diminishing regard for the sensory and embodied aspects of experience. This has accompanied a marginalisation of place-based knowledge (Hulme, 2010) and a growing Illusion of Disembeddedness (Plumwood, 2002). What excites Vergette is the potential for the *Time and Tide Bell* to facilitate a moment, if even an instant, in which one is ‘listening to the world’, establishing a brief window of sensorial presence. This is an illustration of how works of art embedded in a site offer a “radical restructuring of the subject from an old Cartesian model to a phenomenological one of lived experience” (Kwon, 2004, p.12). The *Time and Tide Bell* beckons us out into the elements. Translating the steady tidal rhythm into a musical chime, the bells invite us to approach the shoreline to catch the notes as they sound. They provoke, hopes Vergette, a momentary tuning into the world, heightening awareness to the rhythms of the landscape.

Moreover, the bells highlight a specific result of this entanglement, and our associated denial: rising sea levels due to a warming climate. Whilst sea level rise, like many indicators of climate change, is regularly stated as a globally uniform figure, the *Time and Tide Bell* is a physical translation of what this comes to mean in a local context which, as Hulme (2010) points out, has a bearing on mobilising communities in the face of environmental challenges. It goes some way towards closing the gap of abstraction that so often confounds us in the face of such a spatially and temporally dispersed phenomenon. They are an example of what Sheppard (2012) calls ‘landscape messaging’ – interventions in an environment that reveal, locally, signs of a major phenomenon like climate change. Vergette (2020) emphasises the potential of the bells to act as reference points:

But if we are going to talk about change, we’ve got to have a marker. ...this is a statement saying ‘we may have done nothing about it, but we didn’t not know it was happening!’ You know, by putting a marker on the high tide saying ‘this is the high tide at the moment’, it’s the beginning of the measuring You’ve got to measure from somewhere. I had to put a marker down. It’s important to me.

Functioning as a marker of sea level rise, the bells transform the locale into what Matless (2017, p.363) suggests is a landscape “emblematic of processes marking the Anthropocene” – an ‘Anthroposcene’. The bells offer a way to “track sea level’s Anthroposcenic repertoire” (Matless, 2017, p.367), demarcating the coast as the frontline of the Anthropocene, where the impacts of climate change will be felt most keenly (Glavovic, 2014).

As material objects, these sculptures introduce ideas of an extended temporality, tending towards the geologic. The bronze they are cast in “is so unreactive to seawater that they’ll be there rolling around 25,000 years from now at the bottom of the sea” (Vergette, 2020). They will endure far beyond the artist that made them or the communities that host them. Vergette (2017, n.p.) suggests that an extended timeframe allows us to understand recent environmental changes and their implications more clearly:

Bells tell stories of the past very easily, but it is not the intention of this project to only mark and connect historic events, but also to look forward. Narrow horizons and short time frames are always misleading and make it difficult to understand the dramatic changes we have seen over the last few years and whether they will lead to chaos or a better future. These bells are designed to work for a long time.

These sculptures will endure for timescales against which our own existence is fleeting, though as human-made objects, they become an enduring mark of our presence.

7.1.2 Art in a community

Vergette (2020) defines his work in contrast to what he describes as the ‘lump’: sculptural work that is often commissioned by corporate entities, “which you just put down and clear off”. A trip to the Eastern Bloc, working in communities ravaged by the Cold War, convinced Vergette to move away from the ‘lump’, and to begin developing work that “*does something*”. He had observed first-hand the importance of enabling a community to ‘play’ together before rebuilding infrastructure, and how artists and their practice can facilitate this playing. This type of work, termed ‘new genre public art’ by Lacy (1995a), saw a turn towards the idea of *community* rather than public, often with a focus on social and political concerns rather than on the site itself.

This emphasis on engagement with a community set new genre public art apart from previous conceptualisations of public art. As Lacy (1995b, p.177) sets out, this practice is:

Diametrically opposed to the aesthetic practices of the isolated artist, consensus building inevitably entails developing a set of skills not commonly associated with art making. To take a position with respect to the public agenda, the artist must act in collaboration with people, and with an understanding of social systems and institutions.

Though this form of public art sometimes involves co-creation of an object, crafted by both community and artist, the *Time and Tide Bell* arrives at its site as a fully formed sculpture: a community has no influence over the design or the casting of the sculpture

itself. However, if we extend the boundaries of what we consider the *Time and Tide Bell* to be – beyond just the physical object, to encompass the process of public negotiation, fundraising and installation – extensive collaboration between artist and community becomes clear. This is “an art whose public strategies of engagement are an important part of its aesthetic language” (Lacy, 1995a, p.19).

New genre public art has faced criticism regarding processes of community engagement functioning as a tokenistic rather than an authentic exchange. In cases where public art is deployed by planners, as part of regeneration scheme for example, problems often lie in the division of power (Pollock and Paddison, 2014). However, for the *Time and Tide Bell* it is the community that drives the process of installation. Importantly, the sculpture is a *gift* to the community. These bells are not commissions; no individual, developer, local authority or other institution has paid the artist to make them for particular locations.²¹ Kwon (2004, p.17) suggests that ownership resting with the community is a central feature of new genre public art:

For the proponents of new genre public art, this ownership of art, or more generally cultural representation, is the basis for the integration of art and everyday life and a powerful force toward social and political change.

Vergette is insistent that each community make the bell their own, infusing it with their own meanings and developing their own traditions. Pollock and Paddison (2014) suggest this impetus from grassroots groups also enhances the sustainability of a project.

With a focus on social and political concerns, and intervention into the workings of a community, Kester (1995) contends that the community artist might be considered as a form of ‘social service provider.’ It is interesting to consider, therefore, the extent to which the *Time and Tide Bell* fulfils a role that is undelivered by traditional democratic means, a void left by dwindling public services or institutional failure. On an impromptu and ad hoc basis, teachers at some of the bell sites have been using them as locations for learning with primary school classes (Gingold, 2018). The Time and Tide Bell Organisation has moved to build on this organic activity, establishing an education programme towards the end of 2019 that encourages and facilitates outdoor learning around the bells, opening routes to multispecies connection (Haraway, 2016). Currently, they are working in partnership with schools close to several of the bell sites, as well as local civic society groups (e.g. Scouts and Guides), providing activities and resources to accompany visits to the sculptures. More recently, as schools closed due to

²¹ Though, in some cases, local authority funding has contributed to the costs associated with installation.

the Covid-19 pandemic, the organisation produced a swathe of ‘learning at home’ resources.

7.1.3 Within a constellation of work

We can locate the *Time and Tide Bell* within a constellation of related creative work. I will briefly introduce four initiatives here as a broader contextualisation for Vergette’s project. The first work is another example of a sculpture that produces sound without necessitating subsequent human intervention; activated solely by the tide. The second is a sculptural practice that highlights tidal rhythms and hints at the force of human intervention. The third focuses on projected rises in sea level driven by climate change, cultivating community engagement and resilience building. The final work I introduce features bells sculpted in response to an environmental phenomenon. Like the *Time and Tide Bell*, a number of these works are one in a series, or a series of pieces that add up to a larger initiative.

Blackpool’s *High Tide Organ* (2002), designed by Liam Curtin and John Gooding, is a 15 metre tall organ constructed of zinc, copper, concrete and steel (Figure 7.2). At high tide, air pressure is conducted through eight organ pipes attached to the sea wall which are connected to a further eighteen pipes within the sculpture. The movement of air through the pipes produces musical chords based on the harmonic series in B flat. The *High Tide Organ*, like the *Time and Tide Bell*, is a musical instrument that sounds without human intervention. On the interpretation board that accompanies the work it is described as a “musical manifestation of the sea”. Its multidisciplinary nature – the result of a collaboration between artists, musicians and engineers – secured funding for the project from the National Endowment for Science, Technology and the Arts (Jury, 2002). The organ was commissioned as part of the Great Promenade Show: ten works of art along Blackpool Promenade, intended to function as an outdoor gallery that reflects the city’s history and culture (Visit Blackpool, n.d.).



Figure 7.2: *High Tide Organ* (Cutin and Gooding, 2002). Photo © Insider Blackpool

Another Place (Gormley, 1997) comprises 100 cast-iron human figures installed on Crosby Beach on the Mersey Estuary (Figure 7.3). Made from 17 different casts of the artist's own body, each figure facing out into the sea, the work stretches across 2.5 kilometres of the coast and 1 kilometre down the beach and into the Irish Sea. The number and extent of the sculptures that will be visible depends on the time of day and the weather conditions. Gormley set out to "test time and tide, stillness and movement, and somehow engage with the daily life of the beach" (Gormley, n.d.). It might also be considered a stark and enduring reminder of human intervention in the landscape. We might judge his success in engaging with the daily life of the beach by the extent to which users of this place have embraced the sculptures as their own: in 2012 New York-based artist Olek covered two of the sculptures head-to-toe in multi-coloured knitting (Youngs, 2012); in 2017 an unknown artist painted outfits onto at least nine of the figures (Youngs, 2017). Though Gormley encourages interaction with his work, this latter customisation is perhaps a little too intimate. Though some argued that these additions were themselves an artistic act, the graffiti was subsequently removed.



Figure 7.3: *Another Place* (Gormley, 1997). Photo © Dan Costin

Eve Mosher’s *HighWaterLine* (2007) is a public art project that saw the artist demarcating predicted water levels with a chalk line, indicating areas of New York that would be flooded due to sea level rise. *HighWaterLine* has been described as an intervention (Lesen et al., 2016) that “leverages art as evidence” (Lange and Mosher, 2011) to make the scientific data of climate change more tangible and relatable to the everyday experiences of the city community. Interaction with the public as Mosher marked the line provided an opportunity for dialogue, the sharing of stories and a reimagining of place. A few years later, when New York was hit by hurricane Sandy, Mosher’s project took on a significantly prescient new meaning. She wrote on her blog:

I have seen images of water up to (and past in many cases) where I drew the line. I keep hearing about incidents that, sadly, don’t surprise me at all... These projects are really really important in engaging around the very harsh, scary and sad realities of climate change. But seeing it is another thing. It hurts. It is scary (Mosher, 2012).

Alongside the project evolved an educational engagement programme, with workshops, learning materials, and opportunities for community organising to develop climate change resiliency at a local level. The *HighWaterLine* has been reproduced by groups in Florida, Philadelphia, and Bristol (Figure 7.4).



Figure 7.4: *HighWaterLine* in Bristol (Mosher, 2014). Photo © Pete Bedwell

For his work *Hurricane Bells* (2018), Peter Shenai cast 5 ‘cyclonic’ bells in bronze, modelled on the structure of Hurricane Katrina at various points along its path (Figure 7.5). The first is modelled on the storm as it arose out in the Gulf of Mexico, the fifth modelled on the point at which it hit land. The bells are suspended in a line and struck in order, producing a series of resonances indicating the growing force of the hurricane as it approached New Orleans (Shenai, 2018). Shenai invites audiences to strike the bells and interact with them as tactile objects, to turn them over, feel their weight, investigating Katrina with eyes, hands and ears (The Heong Gallery, 2020). These bells are a 3D and sonic snapshot of the hurricane. For those of us not caught up in the event itself, this is an attempt to collapse abstraction, transforming this immense unwieldy weather event, making it graspable through the senses. For the communities impacted by Hurricane Katrina, the bells offer a different way of engaging with the memory of that time, a demarcation of the hardship and a focal point for community gathering. Shenai took the bells to New Orleans for the 13th anniversary of the hurricane. Each bell was struck by a local musician at the exact moment it represents.



Figure 7.5: Hurricane Bell 5 (Shenai, 2018). Photo © Cargo Collective

7.2 My experience with the *Time and Tide Bell*

I first encountered the *Time and Tide Bell* in London in 2015. It was a fleeting interaction – if I can call it an interaction at all – at Trinity Buoy Wharf, a Docklands site that is home to an array of interesting artworks and installations. I acknowledged the bell – a large dull metal object attached to the side of the river wall – as I moved from admiring the *Alunatime* ‘moon clock’ by Laura Williams, and then stepped into *The Faraday Effect*, which is claimed to be one of London’s smallest museums. Trinity Buoy Wharf is also home to the physical manifestation of the *Longplayer*, described in Chapter 6. Initially, in amongst myriad creative interest points, the bell seemed intriguing, but ultimately unremarkable.

I thought little more about the bell until a conversation in 2018 with cultural producer Peter Gingold. At an early stage in my doctoral research, I spoke to Gingold about his previous work with TippingPoint, to garner insights from his professional experience. At this point, Gingold was just beginning his journey with the *Time and Tide Bell*. His enthusiasm for the project, and his ambitions for it, were captivating, and I began to explore the idea of the *Time and Tide Bell* as a case study for this thesis.

The first bell I visited as a researcher was in Morecambe. For what was my maiden visit to the seaside town, I journeyed across the Pennines in a jaded two-carriage train. The sky was grey, but the day was dry. Arriving into Morecambe – at the end of the line – I was struck by the starkness of the surroundings: there is little in the way of a station building or even platform shelters. Stepping from the station ramp, a sculpture appeared almost immediately, unexpectedly. A pair of seabirds atop a column in the centre of the roundabout – an unimposing and understated sculpture that sat quietly in the street scene. This set the tone for my walk to the seafront: works of art are dotted generously

along the path, and even within the material of the path itself. More seabird sculptures, poems written on the paving stones, murals on walls. I discovered later that this is the result of the TERN project (1999-2002), which saw artwork incorporated as an integral part of a major structural improvement of the Morecambe sea front, the centrepiece of which is the Eric Morecambe statue.

I walked along the promenade towards the spot where I had been told the bell was located. The tide was out, exposing the mudflats: a puddled expanse dotted here and there with small boats. I spotted the Stone Jetty before I made out the bell, a protrusion from the promenade, out into the mud. Previously conducting a railway line out into the bay, the jetty is now home to sculpture, benches, and a small café in the old station building. The *Time and Tide Bell* is placed on the eastern wall, attached by shiny metal struts (Figure 7.6). The tide line is far in the distance, and the clapper hangs dry and still. Though the beach was empty, on the jetty there were a handful of people. There was a group of four standing by the bell. An opportunity, I thought, to observe what responses the bell invoked. “I think there are a few of them around the country, one in the South West” said one of the group, “I don’t know what I think about it: it’s interesting.” This caused me to ponder. As a researcher, I had hopes of happening upon revelatory reactions to these sculptural pieces. Yet my own reaction to the work at that point mirrored what I had overheard: I found the bell intriguing, though the depth of it felt somewhat elusive.



Figure 7.6: *Time and Tide Bell*, Morecambe

That visit to Morecambe was my first of three to that particular bell (thus far). I have heard the bell rung by the tide only once; at the unveiling of the interpretation board,

much to the relief of the organisers. (Though I once witnessed an individual clamber up onto the jetty railings to ring the bell manually, grasping the upper clapper and forcing it against the mouth of the sculpture.)

I subsequently visited the bells in Mablethorpe and Cemaes, my first time visiting these locations as well. Arriving at the seafront of Mablethorpe, I was greeted by classic features of the British seaside resort: amusement arcades sat alongside colourful shops of candy floss and sticks of rock, overlooking a beach of sunbathing bodies and sandcastle construction. A line of wind turbines in the distance gave the scene a more futuristic, almost dissonant, feel. After a fish and chip lunch I began searching for the bell, which wasn't resident amongst the hubbub of beachgoers enjoying the sunshine. After 20 minutes of walking, leaving the crowds behind us, my companion began to query my navigation skills. We could see no evidence of a bell upon the flat landscape of the Mablethorpe beach. I persisted. A further five minutes and a solid form emerging vertically from the horizon came into view. A final five minutes and we reached the bell, elevated above the sand by a cage-like structure of metal and wood (Figure 7.7). The tide was out, tens of metres from the bell: we were not going to hear it ring. We circled the bell once, twice, and then decided to brave a swim in the North Sea as ominous grey clouds rolled across the sky. The bell stood solitary, still and solid as the weather conditions flitted from one season to another.



Figure 7.7: *Time and Tide Bell, Mablethorpe*

A few months later, I made a trip to Wales. Having driven up through Anglesey, hugging the east coast of the island, I dropped down into Cemaes bay. Immediately,

there is the bell, a feature of the splendid vista – along with the small harbour and the distant nuclear power station – that greets visitors to Cemaes. Sitting amongst the barnacle- and seaweed-covered rocks that pepper the sand of the beach, the bell appears assimilated into its surroundings (Figure 7.8). Again, the tide was out. The bells tease, only sounding with the highest tide. They don't give their secrets up easily: one must wait until the water has inched closer. I sat on the steps down to the beach, in front of the bell, observing the occasional dog walker or beach-goer pause by the bell, sometimes taking a selfie or two. I reflected on the journey I had taken with the bells, over a five year period thus far. The conversations I have had with local residents, passers-by, and those actively involved with the installation of the bells has layered my understanding of these objects, and the broader project of which they are part.

Since embarking on this research I have become a trustee of the Time and Tide Bell Organisation, so my involvement with the bells has developed significantly. Within this study, I have attempted to consider the bells in the capacity of researcher, bracketing my new position of trustee.



Figure 7.8: *Time and Tide Bell, Cemaes*

7.3 Research conversations

Over a period of a year, I had conversations with several individuals involved with the *Time and Tide Bell*. These include the artist, members of the Time and Tide Bell Organisation, and key members of several bell communities. Most of these have long-standing relationships with the project. I spent significant amounts of time in Morecambe and Cemaes, and made a short visit to Mablethorpe. I will mostly reference

these three locations in this discussion, though I will bring in the other bell communities where appropriate. The discussion that follows draws on these conversations, exploring themes that emerged, with a particular focus on the potential role that art may play in our navigation of the Anthropocene. Firstly, I explore how various individuals functioned as community activators. I then move on to discuss how Vergette himself acts an unintentional activist and examine the various meanings that different individuals garner from the work. I then consider how the work has acted as a catalyst for education and additional creative endeavours. I introduce ideas of place and identity, examining the role of the bells in these areas. I conclude with a discussion of the work as a gathering point.

7.3.1 Community activators

In each community, an individual or small group of individuals was central to enabling the installation of the bell: raising adequate funding, securing local support and applying for the various licences and approvals required. In many cases, these individuals were retired, or had flexible work arrangements, so they had time available to invest in connecting with key local influencers and developing campaigns to gather public support. As Biff Vernon, who leads the Mablethorpe bell group, points out:

The important thing is I'm now retired, so I have an hour or two to spare each week. So that's quite a significant factor.

More importantly, these community activators all manifest what is known as a proactive personality, defined as the tendency to effect change in their environment (Bateman and Crant, 1993). According to Vergette (2020), the installation of the first *Time and Tide Bell* was contingent on an individual involved in a local arts organisation saying “‘yeah we’ll do that’ - she’s one of those types of people”. These are people that make things happen.

As such, they tend to be involved in various other community initiatives or roles: Siân Johnson, coordinator of the Morecambe bell group, is chair of a local community arts trust, actively involved with an artist collective in Morecambe and on the Steering Group for Morecambe Business Improvement District; Biff Vernon, coordinator of the Mablethorpe bell group, is Secretary of the local Wildlife Trust and plays a key role in the Transition Town group; Elfed Jones, instigator of the bell project in Cemaes, is a member of the community council. The process of installing a bell involves a long timeline of applications and negotiations, as Vernon outlines:

Enormous problems with the local authorities, planning permission and stuff like that – it took forever ... the minefield of bureaucracy.

Familiarity with processes, and prior involvement in regional projects, stands these individuals in firm stead to negotiate the regulatory hurdles involved in bringing a public sculpture to their communities. At points, this familiarity and experience was employed strategically, to overcome obstacles. In Morecambe, when the project faced a planning objection, Johnson reports that she had to be very tactical in the arguments she made to get the project approved. In Mablethorpe, Vernon took this a step further, eventually being able to circumnavigate planning permission altogether:

The council is sort of made up of UKIP – by name or nature. And they don't believe in climate change, and they don't believe in art, and they don't believe in spoiling the view of the beach. They were generally pretty hostile. Eventually we found a much more devious route.

Vernon befriended a connection at the Natural England nature reserve on Mablethorpe beach, who agreed to host the bell, and planning consent was not required. This strategic approach extended beyond the bell installation itself to encompass further associated activity, as Vernon outlines:

We very soon learnt that the trick to getting money out of the Arts Council is to have something that has legacy and community involvement So we set ourselves up as a community arts organisation, as a limited company under the CIC²² rules.

This enabled the group to secure funding required not only to bring the bell to the region, but to cover a series of art exhibitions which will be discussed in more detail later in this chapter.

In delivering the *Time and Tide Bell* to their communities, these individuals are not only bringing these sculptures to a new setting and to a new audience, but they are integrating social processes with economics through both financial and cultural investment. They are central to a process that inserts art into the everyday landscape of coastal communities, out of gallery spaces and away from the usual centres of cultural investment. Vergette remarked about the Bosta community:

The entire island showed up [to the public meeting about the *Time and Tide Bell*] ... They were so touched. No one had ever asked them ever if they wanted anything.

Here, in a community that Vergette suggests may often be overlooked, gifted art takes on a new significance. Similarly, in Mablethorpe, Vernon suggests that the bell was welcomed, almost as an item of prestige:

²² A Community Interest Company (CIC) is a type of organisation with primarily social objectives whose profit is reinvested for that purpose in the company or in the community.

Locals were saying ‘oh, isn’t it great that somebody’s doing something for us, that we’ve got something famous coming to our place.’

We might consider these individuals to be “guides and facilitators, helping people to access and engage with culture in different ways” (Jones et al., 2019, p.11), bringing art out of its usual spaces, into the everyday, and into localities that have otherwise been overlooked.

The concept of the ‘cultural intermediary’ is useful to draw on briefly here. Taylor (2015) suggests that we can understand intermediation as involving three essential aspects: the transactional, the regulatory and the strategic. We can see all three exhibited by those individuals involved in bringing the *Time and Tide Bell* to their communities. The transactional aspect involves connecting with and bringing together necessary economic and social agents to finance the installation of the bell and associated activities. The regulatory includes a familiarity with social and political norms to navigate planning barriers and drum up local support. The strategic, as defined by Taylor (2015, p.364), “represents the persisting structural social forms through which these relations and subjectivities are reproduced”. What becomes clear is that the individuals involved with the *Time and Tide Bell* successfully exploit or manipulate these structural social forms to deliver a project outside of conventional means. They are actively sowing the seeds of a new narrative (Neal, 2015).

7.3.2 Position of the artist

Almost all those I spoke to involved in the *Time and Tide Bell* pointed to Vergette himself as one reason for their commitment to the project. They referred to him as an engaging character with a compelling passion for his work. In Morecambe, Johnson suggested that this is what led to their becoming a bell community:

Marcus is inspirational. ... We did it because Marcus really sold that environmental story to us.

Similarly, in Mablethorpe, Vernon acknowledged that Vergette’s temperament ensured they saw the project through to installation, despite facing challenge after challenge:

Had I known how much hassle it would have been, I wouldn’t have touched it with a barge pole ... [but] Marcus is a very – such a nice laid back, ‘it’ll happen in its own time’ kind of guy. And we got on well and so, you know, once we’d decided to do it there wasn’t really any escape [laughter].

Gingold, too, when I enquired about what drew him to the project, first pointed to Vergette and the relationship that they have been able to build:

There's one relatively simple thing: Marcus is a really appealing character, I find. You know, I get on with him very well and he has qualities of his own.

A concern that could arise here is the extent to which the success and sustainability of this national initiative depend on the charm and inspiration of one individual. This would suggest precarity for the project, immense pressure on the artist, and a potentially problematic division of power.

Yet Vergette holds it to be centrally important that a community owns the work once it has been gifted to them. Moreover, it is the community that make the pertinent decisions involved in the installation. In Cemaes, a choice of four different sites was presented at a public meeting. Overwhelmingly, the community chose its current site which is right on the beach: rather than only being discovered by those who chose to walk around the headland (Vergette's favoured location), local residents wanted it close to the car park, where it is accessible to everyone. There is little preciousness with regards to his finished work. Vergette is unfazed by my story of rocks being thrown at the bell in Cemaes:

I don't care if they climb on it, jump on it. In the Isle of Lewis they shoot it with shotguns [laughter].

This is a significant release of control, and Vergette exhibits a desire for the communities to forge their own interactions with the bells, whatever forms these may take. Percipience of this dynamic between artist and community ensures that the *Time and Tide Bell* becomes an object and initiative of the community, taking on meaning that emerges from the place itself. The importance of this is highlighted by Greene (2001, p.41, emphasis added), who suggests that "it is the *significance* of art forms, not simply their decorative value or complexity, that gives them staying power in experience." And this significance emerges from the audience as much as it does from the artefact itself – through an entanglement of the two.

What appears most important for Vergette is that he can continue making this work. As an artist, he has a drive to create:

I can't stop making stuff. So I mean it's just a question of is somebody going to take it or am I going to stack it? And if it's out there, and it can be a catalyst, then that's great.

Vergette himself does not hold tightly onto ideas about his work that others must share but is happy for it to play a role in a community if it is able (I will consider the notion of catalyst in more depth later in the discussion). The work becomes a tool or platform that may be used by those who engage with it in ways that they see fit. In the case of the Time and Tide Bell Organisation, these bells are offering a platform for outdoor

education and citizen science. In the case of some Bosta residents, they are a platform for target practice.

7.3.3 Layers of meaning

As well as his fondness for Vergette, Gingold pointed to the simplicity of the project as a factor that drew him to getting involved in its development:

Of the many, many pieces of work that I came across through TippingPoint, and many of which we commissioned, this just instinctively appeals to me. You know, a bell that rings when the tide comes in. You know, incredibly simple idea. Very powerful. And the notion, it's got that message that the pattern of ringing will change as the years go by is appealing. So is the layers of the project.

Here, Gingold is not implying that the project is lacking in depth – he clarifies this with his reference to layers. Instead he is highlighting the accessibility of the work in the first instance. This simplicity is something that Vergette emphasises:

They're not a cryptic crossword puzzle. You know, there's not some hidden deep something that only a special type of person could extract.

There may well be meanings and dimensions that emerge after further engagement and consideration, or if equipped with certain tools, but no particular expertise is necessary to recognise the core of it: “a bell that rings when the tide comes in” (Interview with Gingold, 24 October 2019).

It is important to note that despite these claims of simplicity, there is an acknowledged role for interpretation. In particular, Johnson considers the interpretation panel to be a vital part of the installation in Morecambe. The environmental message, she suggests, becomes lost without it:

If you had the bell there on its own, which the other ones do, they just have the bell on its own and talk about the poem they've written and not much more. They're not actually talking the environmental message at all and I think something's missing frankly.

During the early phase of the project Vergette was reticent to include interpretation panels alongside the bells, reluctant to impose a particular meaning on the work. It rubbed up against his distaste for didacticism. More recently, he has accepted the steer from the bell communities, many of which align with Johnson and the group in Morecambe:

I think there's a real role for the interpretation ... there's an agreement in the group that there should be more signage. People might not know that it's there, or not know what it's about, or not know that it's part of something

else. And I love the romantic artist idea that people can make of it what they will or not, but I think it's a wasted opportunity not to show people what it really is, what it means, what it connects to. ... When I've talked to people ... what is it and so on: 'oh yes, oh fantastic, where are the other ones?' You know, they wouldn't have known that unless you tell them that.

This 'wasted opportunity' is a significant one: according to Johnson hundreds of thousands of people visit the seaside resort for events each year. Including a graph of sea surface temperature – a key indicator of climate change – on the interpretation panel was a deliberate move to highlight the link to climate change (Figure 7.9). It makes a suggestion as to how an audience might orient itself towards the work (Sedgman, 2017).

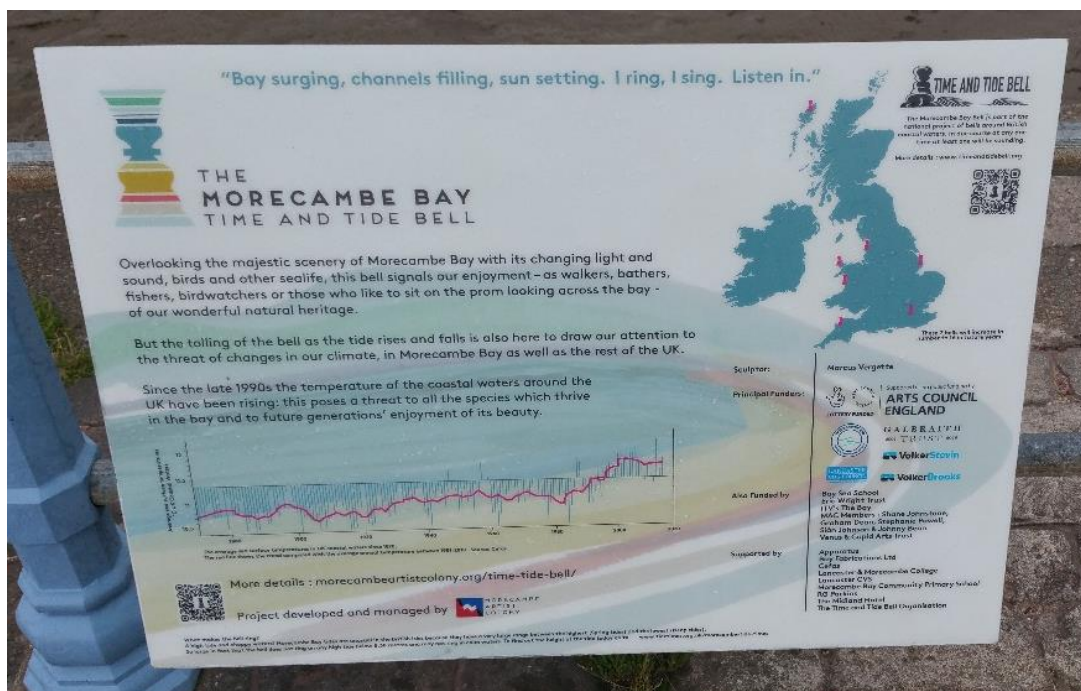


Figure 7.9: Interpretation board at the *Time and Tide Bell* in Morecambe

For Johnson the *Time and Tide Bell* locates the reality of climate change, often perceived as a threat distant in time and space, in the Morecambe area. When designing the interpretation board, the Morecambe team ensured it reflected the colours of the bay to highlight that:

It's our version, it's Morecambe Bay's version, it can happen here, it is happening here, that's the story.

Locating the *bell* in Morecambe locates *climate change* in Morecambe, collapsing the spatial abstraction. The impacts of climate change, represented here by sea level rise, become relevant to the local community, more likely to be acknowledged as present in the everyday, echoing the assertions of Hulme (2010). However, Brugger et al. (2016)

challenge the idea that simply proximising climate change increases individuals' motivation to act. This is a challenge reinforced by my conversation with the owner of a café located to the site of the Morecambe bell:

I don't really know about climate change so much really. I mean, the sea's always going to come in and go out, isn't it, no matter how the climate changes. And I don't know if it's going to be higher. ... I think it'd actually go somewhere else, where the land meets the sea and it starts soaking up that way and it would take a bit of land away and the sea will get bigger that way, not come in like it is now, because we have all these rocks and sea defences.

Despite walking past the bell almost daily and having had significant interaction with the team behind the installation, climate change remains psychologically and spatially distant for this individual. This is not a reflection on their general response to the sculpture: they were very positive about what the work could bring to Morecambe. Whilst the bell functions to proximise climate change for Johnson, it operates differently for this café owner.

In a similar way, the majority of passersby I engaged with spoke of the bell as a warning system, to alert people to the incoming of the tide. Like many coastal communities, the sense of the tide as a force to be wary of is grounded in both experience and longstanding myth. In Morecambe 23 Chinese cockle-pickers drowned in 2004, caught unawares by the rapid return of water into the bay. The Bosta Time and Tide bell commemorates a local resident who disappeared whilst out fishing in the bay. In Aberdyfi, a wariness and respect of the sea is grounded in legend. Cante'r Gwaelod was a settlement located further out into Cardigan Bay: neglected duties to ring the bell at times of threatening tides is said to have led to the settlement becoming submerged at the end of the estuary. Many poems and songs refer to this Gaelic legend, and I heard echoes of the story in Cemaes from a passerby who told me that the *Time and Tide Bell* there monitors the tidal level and sends a warning if people need to attend the watchtowers. The lack of watchtowers in Cemaes suggests a slippage of stories, but nonetheless emphasises the role of bells as a warning, and how this meaning is locally drawn.

These individuals point to only one aspect of the entanglement that Vergette holds the bells draw attention to. As a warning, they highlight the might of the sea, but overlook the notion of humanity as a geological force affecting these mighty waters. Like Johnson, Helen Grove-White, a member of the Cemaes bell group, suggests that without interpretative resources, this meaning may remain obscured:

This is the thing I can't answer, as to does it make people think about climate change? Probably not. But could it? Probably yes it could, so that would be something for more signage, try to write something on the leaflet

that was meaningful. But it's up to people as to whether they take that in or think about it at all.

Meanings will shift as interaction with the work evolves and deepens, though it is important that this work remains a subtle intervention. The alternative, suggests Vernon, is an ineffective blunt instrument:

The alternative [to installing an art object] would be to say to somebody 'excuse me, there's a climate emergency, you've got to stop burning all fossil fuels by tea time today.' But generally when you say that to people they just carry on, so you have to do things in a slightly more subtle way. So yeah, that's the message. We do actually have to change everything if human civilisation is to survive. And nothing we have done so far has worked, so we're just trying something else that might give a nudge to some people in the right direction. I guess that's about as much as any of us can expect.

What becomes obvious through this assertion from Vernon is that this subtlety is a strategic choice, an attempt to deliver information under the radar. In the face of unsuccessful attempts to encourage action on climate change, public art like the *Time and Tide Bell* becomes another tactic to employ.

7.3.4 Catalysing engagement

Vergette's ambition for the *Time and Tide Bell* in its current guise, steered by Gingold and backed by the National Lottery Community Fund, is for it to grow as a catalyst:

That's what I'd like it to become now. This new possibility has arrived – if I was to imagine the next thing. Because it was a little small catalyst in different ways, and then with Peter [Gingold] and all that, and what he brings to it, I thought that now it can be a bigger catalyst.

Specifically, he suggests the bells have the potential to be a catalyst for engagement with a local environment and local community. The seeds of this engagement are sown, suggests Vergette, with the installation process that involves extensive interaction with the community and the physical site of installation. Here, I will focus on how the bells might catalyse engagement with the environment both locally – in particular through the associated education programme – and in a more global sense through other activities the bells have precipitated.

As I mentioned above, the Time and Tide Bell Organisation now hosts a learning programme. Education Coordinator Juliette Heppell has developed resources and suggested practical activities linked to the current curriculum that can be used by teachers and parents. Using the bells as sites of learning begins to highlight the pedagogical potential of art, which Heppell recognises:

There's lots of potential to engage kids, and help them be interested in their local area, but also have link ups around the country, which is really rare.

The education programme offers the bells as focal points around which other activities are convened. In particular, it invites exploration of the environment immediate to the bell – the forms and processes of the beach, the sea, the intertidal zone; the myriad creatures that these are habitats for – whilst offering a platform from which to connect with environments elsewhere.

As discussed in Chapter 2, addressing the systemic challenges of the Anthropocene – including climate change, stark levels of inequality and biodiversity loss – demands creative, multiplicitous ways of thinking, challenging the disciplinary boundaries that run through the traditional school curriculum. As Heppell points out:

That's the problem, especially with the current curriculum we have in the UK, is that it boxes everything up. And it's been boxed for a very long time, so it's very hard for teachers *and* children in school to see any grey areas or any blurring or any crossover. And that's where doing a project like this is really good, because you can argue with teachers that it's maths and physics and all the things that they're uncomfortable often delivering, but it has links into so many different areas.

The *Time and Tide Bell*, coupled with Heppell's strategically designed education programme, offers a gateway into different ways of exploring the world, outside of the disciplinary boxes imposed by the formal curriculum. Though this gateway may only be accessed once or twice a term, Heppell is confident that these "little tiny stages all help to bring in different perspectives". Action research engages students and their teachers as place-makers and problem-solvers, a dynamic that extends further into the community with the citizen science initiative.

The bell has also become a catalyst for engagement with the global character of environmental degradation in the Anthropocene, most obviously in Mablethorpe. Vernon, who points to Snow's *Two Cultures* as his childhood inspiration for pursuing both art and science (he had a career as a science teacher, but was an artist at home), is somewhat critical of art that fails to play an activist role:

There are lots of little sort of nice art exhibitions around the countryside where, you know, people paint nice pictures of trees and houses and things, and they're very nice, but to my mind they're a bit dull because they don't really have a theme or a message or they're not really being used as political weapons, they're just pretty.

Vernon's suggestion that these are 'just pretty' effectively categorises such art as that which rescues us *from* emergency, as introduced in Chapter 3, distracting from the realities of the Anthropocene. In contrast, the bell has offered Vernon an opportunity to convene exhibitions that "take a much more radical approach" and perhaps, as "political

weapons”, attempt to rescue us *into* emergency, offering “points of departure to change the world” (Zabala, 2017, p.10).

The Mablethorpe bell has provided a platform for an associated programme of art exhibitions hosted at the North Sea Observatory just a little further along the beach. Any and all artistic contributions to these exhibitions are welcome and there are no fees associated: they encourage involvement from both professional artists and complete amateurs, as well as anyone in between. Vernon insists that these are:

Not just art exhibitions where people go and look and say ‘ah, I like that painting, I don’t like that one so much.’ They’re very much using the art to tell a story, to give a message, to provide some information or make people think in a way they haven’t thought before. All with an environmental theme.

For Vernon, art becomes a vehicle for raising awareness, drawing attention to both local and global environments. The first exhibition, *#200Fish*, highlighted the richness of the North Sea ecosystem, depicting all 200 fish species that can be found in the locality, and attempted to draw attention to the threats of climate change and marine pollution.

Around half of the works on show were from local Lincolnshire artists: the remaining contributions were from further afield in the UK – Cornwall, Sutherland – and beyond, featuring artists from every continent. It is noteworthy that whilst focusing on the very local characteristics of Mablethorpe, this exhibition should simultaneously showcase the work of a very global community.

7.3.5 Intervening in place

In the communities where they are located, the bells have become part of the landscape: sonically, visually, materially, and in some cases, socially. Grove-White suggests that the Cemaes bell has “settled in as part of the feature of the land”. Vergette expresses a satisfaction with the ways in which this is manifested:

I’m just pleased that there have been some nice responses, beautiful responses. People who make it a ritual in their daily life, or kids who use it to catch girls in the summer, or the ones who shoot it with shotguns – I’m sure there’s a little ritual that’s developed around that. The way it gets incorporated in a place, do you know what I mean? The gig rowers in Appledore use it because then they know the tide’s changed at the sandbar mouth because that’s the height we set it at.

Vernon paints a similar picture of the bell in Mablethorpe:

And its become quite a nice destination. You go there now and see people taking their dogs for a walk. They go to it as a place to go to and come back, like it’s sort of a marker on an otherwise sort of blank landscape. I’ve even

seen somebody jogging along the beach and they reach the bell, jogged round it, and jogged back again. They weren't actually interested in the thing in itself, it's just an object to, to sort of break up the landscape and get to and get back again, you know.

In small, subtle ways, the bells have intervened in these places, becoming stimulants of reflection, initiating reconfigured negotiations with the environment. Massey and Rose (2003, p.9) propose an even broader role for public art in the very production of place, particularly through intervention into “the negotiation of difference which is place”.

Public art is often employed as a contribution to local distinctiveness (Selwood, 1995), to set one location apart from another. Johnson considers the bell to be an ‘asset’ for Morecambe, an attractor of tourism and a stimulus of regeneration. Indeed, I am aware of at least two individuals (unrelated to the organisation) who have travelled to all the current bell sites, so the idea is not wildly unfounded. Interestingly, the *Time and Tide Bell* functions as a demarcation of difference whilst simultaneously drawing this place into a collective identity of *Time and Tide Bell* communities. Grove-White expresses the value of this dynamic:

I loved the idea that it was more than the sum of its parts. ... I liked the idea that it would bring something to Cemaes that would put Cemaes on a map, put Cemaes on a different sort of map, you know, the map of the British Isles with the bells around it.

As a marker of the high tide over time, the *Time and Tide Bell* demarcates each of these places as sites evidencing the Anthropocene, though the pace and tempo of this evidence will vary amongst them. Their uniqueness becomes obvious even amongst their similarity.

Most of the bells are located in remote, marginalised and relatively poor communities. In general, socio-economic disadvantage has been on the rise in coastal resorts across the UK (Agarwal et al., 2018) and young people are impacted in particular due to limited educational and employment opportunities (Select Committee on Regenerating Seaside Towns and Communities, 2019). Heppell remarks that young people often have little awareness of the richness within their local environment:

My view is that, especially young people, young people who live on the coast ... have no idea what is there, they have no concept of what is there.

She goes on to suggest that exploration of the local environment, and the accompanying knowledge that develops, can lead to a sense of pride in place, which the *Time and Tide Bell* can assist in developing:

And anything that brings them out and starts to get them to explore about it, helps them to feel more *proud* of where they are. And I've worked with a lot of children who don't have any sense of pride about where they live or

where they are, or any sense of belonging. And I think it's really vital that they are given that. And I think one of the things about having the bell and it doesn't just sit there and get forgotten about, but there's activities around it, gives them a sense of belonging, and a sense of pride. It's something special about where they live that not many other places have that is important. And I think also that it's a good reminder that it has to be looked after – the place and the bell.

Activities linked to the bell, through local schools or youth groups, encourage an active engagement with the local area. This is a form of action research that Gruenewald (2003, p.640) suggests “begins when children and youth start investigating their own familiar places, identifying issues, analyzing them, and then planning and implementing some sort of action”. This engagement can come to extend beyond the bell site, to encompass the politics and social dynamics of the community.

According to Grove-White, the bell engenders a sense of pride in Cemaes:

I think in terms of there not being very much public art around here, it's a thing that people are quite proud of, if they think about it at all. They may not think about it at all, but if they are, it's 'our bell'.

This is evident on visiting the village: an image of the bell adorns the welcome sign, photographs of it against the sunset fill the windows of the local framing shop, and it features in the pages of the village newsletter. Brown and Perkins (1992, p.282) suggest that “place attachments ... are nurtured through continuing series of events that reaffirm humans' relations with their environment.” It is through active engagement and interactivity that a relationship with place is developed, from which a sense of pride may emerge. The bell becomes another feature with which to engage and interact, and may in fact encourage an engagement and interaction in the first place.

7.3.6 Gathering point

A network is established around each bell, initiated when the *Time and Tide Bell* is first proposed as a project for the local area. As previously mentioned, the installation of a bell is a lengthy and potentially convoluted venture. Despite this, Grove-White acknowledges a positive aspect amongst the hurdles:

What I did learn from this is that installing public art is a massive undertaking. It's challenging. I mean I'm proud that we did it because when you first take it on, you don't think that it's going to be that difficult and then we started it [laughter]. The number of commissions and hoops and things you have to jump through. It was part of the fun actually. I had a great group of people ... There were about half a dozen of us. And it really did- it really was a fun thing. We'd meet up every few months and rattle through an agenda.

Fixing the bell in place involved a network of individuals that extended even further, beyond those with a primary interest in public art or environmental messages. Local engineering firms participated in the installations in all three locations I focused on, and often went out of their way to support the project, working through gale force winds and driving rain in Mablethorpe, and manufacturing the supporting structure for free in Cemaes. Grove-White recalls that the installation:

Did bring people together actually. ... They didn't know anything about art, but they did know how you might attach a thing to a thing and how you might lift the thing... They got it. I hope they feel an ownership of it.

This is a group that would otherwise not have convened, now gathered around a shared goal. As such, this project begins to take on the shape of what Neal (2015) refers to as a 'transitional arts practice' that brings people into a collective, maximising relationships for action in the context of global challenges.

We can extend this idea of confluence and relationship-building beyond the human to acknowledge the ways in which the bell intervenes in the landscape and catalyses interaction between human and environment. As Plumwood (2002, p.231) acknowledges:

For most people in urban contexts both place and the more-than-human sphere are disempowered as major constituents of identity and meaning.

The bells open up avenues of possibility for the acknowledgement of identity and meaning amongst the more-than-human sphere. Not only has the *Time and Tide Bell* initiated original patterns of social engagement, it also demonstrates the potential, particularly through the emergent education programme and citizen science projects, of facilitating creative and considered engagement with the more-than-human sphere.

These collectives and relationships exist even whilst meanings and motivations may vary. Within just this short discussion, the meaning of the bells has been multiple: an economic boost, a spatial and temporal marker, a platform for citizen science, an object to throw rocks at, and a platform for continued activism. Despite the offerings of interpretation alongside the bell in some of these communities, this heterogeneity persists. Such interpretive flexibility evokes the concept of the boundary object, enabling different groups to work together without the necessity of a consensual shared interpretation (Star, 2010). Heppell acknowledges the importance of this characteristic:

What I think is really interesting is that it's a fixed point, and it's a fixed piece, that can be used in so many different ways. ... That's quite vital about it I think, that it is broad.

The interpretive flexibility of the work, and the manner in which it is offered to a community, situates the *Time and Tide Bell* as an accessible, and malleable site of

meaning creation and relationship development. It is interesting to consider the extent to which it is the endurance in place that enables these further meanings to emerge. If, rather than a permanent fixture, the work was a temporary installation, there may be far less opportunity for relationships between art and audience to develop a multitude of layers and the work to become imbued with a local, personal significance. This is an idea that I will explore further in Chapter 8.

7.4 Conclusion

This chapter began with an outline of the *Time and Tide Bell* project and a discussion of reflections on the Anthropocene and role in a community. I then offered some broader context by situating it amongst several other related artworks. After a description of my experience I moved on to examine themes that emerged from conversations with participants. The *Time and Tide Bell* contains layers of meaning that appear to become increasingly accessible as active engagement with the work increases. These meanings will continue to shift and be negotiated as the community and the environment alter around the work. Key individuals in each community were central to ensuring not only that the work is installed in the first instance, but also shape how its meanings may extend out into the locality.

Though it is Vergette himself that draws many people to the project, he has little desire to impose his own understanding of his work onto those who come to own it. A bell rung by the tide is a simple, very accessible notion, that offers an entry point into a multiplicity of deeper connotations, coloured by the community and the landscape. It offers a platform for outdoor learning and engagement, and additional creative endeavours, catalysing a swathe of activity that takes on a life of its own. These bells become part of the landscape, adding their sites to a newly drawn map and offering their residents opportunities to develop a renewed sense of identity. Novel communities of often unlikely associates are bound together by the challenges of such a project, establishing relationships and practices that may become increasingly valuable in the face of the Anthropocene.

Chapter 8 A discussion across the case studies

The case studies presented in the preceding three chapters offer insights into the breadth of creative work engaging with the concept of the Anthropocene. Having focused on each of these three case studies separately, I now want to consider them together. What can we learn by looking at them alongside one another? If we read across the cases, what new insights emerge? I begin this chapter by exploring how the integration of different ways of knowing may have shaped the participant experience. I move on to review the presence and influence of meaning-making pathways and signposts offered within each artwork. I then examine the different degrees to which the works are embedded into and endure in everyday places, before exploring how each artwork approaches the concept of the Anthropocene and how this aligns with their intended site of transformation. Finally, I identify how each piece sits within a broader context and propose that recognising creative interventions as one part of an extended and complex sociocultural context is particularly important for this type of work. I finish by presenting an overview of recent developments in the field and briefly outlining how these align with the findings of this study.

8.1 Multiple ways of knowing

Operating beyond solely the visual, all three of these artworks offer us different ways of accessing Anthropocene ideas. As I outlined in Chapter 2, an Anthropocene visuality can slip easily into spectacle, fixing us as distanced and detached observers. Our grasp on the Anthropocene, and the potential it offers as a juncture, demands a fuller sensory engagement with the world. The case studies examined here begin to reveal the limitations of our existing knowledge systems and offer new ways of perceiving and engaging with the realities and implications of the Anthropocene. They offer alternative routes to engaging with the dimensions of our current epoch, directing our attention and challenging our assumptions, adding additional layers of insight onto our existing understanding, reconfiguring our apprehensions. In this way, the case studies exhibit characteristics consistent with assertions from Hawkins (2010), and Hawkins and Kanngieser (2017), that interactive art offers an experience not just of the mind, but also of the sensory body.

The case studies also make clear that working with these alternative knowledges risks the same restrictions as the contemporary western knowledge hierarchy: it is the *interplay* of different knowledges, rather than their isolation, that broadens potential

meaning. Particularly with regards to the *Coral Empathy Device* and the *Deep Time Walk*, participant conversations suggest that, in most cases, a blend of different ways of knowing established a more complex picture and a deeper grasp of the work. In the case of Kat Austen's *Coral Empathy Device*, the physical dimensions of the experience added a tangibility to existing knowledge. However, this tangibility was only realised once the physical dimension was given some explanatory context: only the sensory and contextual information *together* offered several participants something approaching a sense of empathy. Similarly, regarding the *Deep Time Walk*, for most participants it was the physical act of walking alongside the informational narrative that enabled access to a felt sense of scale unlike that offered by conceptual metaphors. This is also the case regarding the *Time and Tide Bell*. These sculptures offer the potential for a multiplicity of meanings, shaped by what an audience brings to the work, the context they access it within and the potential activity it may be central to: as part of a broader programme, the bells offer platforms for cultivating different forms of knowledge, for example through sonic interaction, play-based learning, or scientific investigation.

8.2 Pathways and signposts

Experiences with art involve an entanglement of artwork and audience, a commingling of content from both the artwork and the personal archive, weaving a tapestry of meaning. As such, audiences become composers of sorts:

She [an audience member] observes, selects, compares, interprets. She links what she sees to a host of other things that she has seen on other stages in other kinds of place. She composes her own poem with the elements of the poem before her (Rancière, 2009, p.13).

Thus, each experience is different – from individual to individual, as well as between the first and any subsequent encounters – and becomes so as various elements are drawn upon, forging a pathway of meaning through the encounter. To an extent, this is shaped by the cues and tools offered by and alongside the work. As Sedgman (2017, pp.316-317) articulates:

Audiences do not necessarily have to be 'experts' in order to respond to art, and art does not need to be understood in order to be meaningful, yet people do need to feel able to grasp how they are meant to be orienting themselves (physically, cognitively, emotionally) towards an experience in order to gain value.

An audience must be able to craft enough of a foundation, drawing on proffered cues where necessary, for this grasp to be within reach. Whilst there are important arguments about the value of artwork that confronts and confounds us, without any foundation

from which to grasp, the balance could tip from interest to confusion, and potentially result in disengagement.

Moreover, the range and extent of possible meaning-making pathways is contingent on the space available within the work for audience autonomy to manifest. What makes art a unique contributor to our understanding and navigation of the Anthropocene, suggest Galafassi and Kagan et al. (2018, p.77), is “its freedom to pursue open-ended explorations of any topic through an ever-expanding set of practices not wedded to finished ‘outcomes’”. However, very specific artist intention, wedded to a particular outcome, may result in a rigidity that dictates a singular pathway through the work, leaving little space for audience autonomy. To extend Rancière’s analogy, without space to introduce additional compositional elements, the poem is all but published already. As such, the personal relevance of such poetry will likely be curbed.

These three case studies differ significantly in the extent to which they offer an audience cues, tools and space to forge a meaningful pathway through their encounter with the work. Though the intention here is not to make comparative evaluations, examining the three together, along with audience responses where available, does indicate that audiences value cues and signposts, drawing upon them to aid their process of meaning-making. As discussed in Chapter 5, participants who engaged with the *Coral Empathy Device* indicated that they struggled to grasp how they ‘should’ orient themselves towards the experience. In situ contextual materials were sparse and there was an authorial expectation that the audience would actively search for associated material beyond the installation. The choice to withhold this contextual supplement limits the cues available for an audience to draw on and consequently constrains – to an extent – the possible pathways to meaning. Austen holds tightly to the shape of the interaction between audience and artwork, restricting levels of audience autonomy. Few participants expressed having drawn various meanings from and connections with the *Coral Empathy Device*, suggesting that its relevance is limited if an intended interpretation is not achieved.

Walkers are free to choose the location of their *Deep Time Walk*. They are also afforded the potential of accessing accompanying explanatory information in the app glossary,²³ though the walker is encouraged to put their phone away at the outset and is not explicitly alerted to this resource. The nature of the work (as a digital app) makes revisiting the *Deep Time Walk* at a later point a very feasible possibility, and several study participants expressed a wish to do so. Some had already played with the difference between urban and rural walking environments, and there is scope to further

²³ A time-contextual glossary offers explanations of key concepts introduced in each section of the narrative.

explore the influence of different landscapes or seasons, or to listen in a different way to the dense content in order to glean different meanings. As mentioned previously, Jessica's father had completed the *Deep Time Walk* at least eight times since her recommendation. Each walk offers a different experience with the app, as both the walker and surroundings alter, and new aspects of the narrative come into focus.

The *Time and Tide Bell* is offered to an audience – as it is to a community – as a gift for their interpretation and investment. As discussed in Chapter 7, Vergette has no singular message or meaning that he intends these sculptural bells to convey, and does not imagine a specific way of interacting with the work. My research conversations revealed a multiplicity of meanings: a tidal warning system; local cultural distinction; climate change indicator; memorial tribute. Increasingly, the bells offer an opportunity to draw attention to climate change and sea level rise (through the accompanying interpretation boards), and function as a platform for educational activities and citizen science projects, each offering different elements for use in composition, to use Rancière's (2009) analogy. However, these supported forms of engagement do not preclude other pathways through the work, and the bells continue to afford a multitude of relations. As a bell remains embedded in a landscape, these meaning-making pathways will continue to develop and accumulate over time.

Of course, it would be remiss of me to neglect the role of the audience in this dynamic. To extend Rancière's analogy further still, a poem cannot be composed without the presence of a willing poet. And as Idema (2014, n.p.) points out, "artworks that speak for themselves do not exist." Meaning is not something buried within a work of art that can be extracted through the application of rules or formulae. It is emergent, through an interaction with the mind and body of an audience. Sontag (1966, p.22) articulates that a work of art depends upon:

The cooperation of the person having the experience, for one may see what is 'said' but remain unmoved, either through dullness or distraction. ... art cannot seduce without the complicity of the experiencing subject.

Art offers an epistemic opportunity, a potential which can only be realised if an experiencing subject firstly acknowledges the value of the opportunity, and secondly, is able to participate in its realisation. A narrowly focused attention, prioritising abstraction and certainty, will resist this 'seduction'.

We can, however, develop skills and capacities to engage with art in ways that open us up to these aesthetic opportunities. Greene (2001, p.6) proposes that aesthetic education can:

Nurture appreciative, reflective, cultural, participatory engagements with the arts by enabling learners to notice what is there to be noticed, and to lend works of art their lives in such a way that they can achieve them as

variously meaningful. When this happens, new connections are made in experience: new patterns are formed, new vistas are opened. Persons *see* differently, resonate differently.

What Greene describes here is not an application of formulae. At the core of this definition of aesthetic education is a deliberate form of attention and an active reciprocity. It is an engaged, curious, broad attention, alive to difference – a way of being in the world that Greene suggests is ordinarily suppressed. Though I did not set out to interrogate the disposition or attitude of participants in this study – and thus I can shed little light on this aspect of the relationship between audience and artwork with regards to these case studies – it became evident to me that further research along these lines would be of value to the field, offering insight into another important dimension of experiences with art.

8.3 Embedded in place

Each of the cases featured in this research demonstrates the material relationship between an artwork and the place in which it is encountered. Participants remarked upon the location of the *Coral Empathy Device* installation: its ‘run-down’ appearance evoked notions of interrogation and torture while the unfamiliar, out-of-the-way area introduced an atmosphere of apprehension. The *Deep Time Walk* involves an interplay between landscape and narrative, illustrated in the contrasting characters of rural and urban experiences, marked consecutively by awe and despair. For some, the journey through deep time acted as a form of emplacement, orienting the walker in the landscape, a “sensuous interrelationship of body-mind-environment” (Howes, 2005, p.74). Narrative and motion encouraged new ways of noticing for those walking through familiar surroundings. The bronze sculptures of the *Time and Tide Bell* are an explicit intervention in place, becoming part of the landscape itself. These bells function as a marker of tidal movements, but also of local concern for place in the Anthropocene. Visitors, both human and nonhuman, are drawn to the site, as the sculptures become tourist attractions as well as locations for citizen science projects, and are gradually colonised by various species of marine organism.

As global phenomena, challenges of the Anthropocene including climate change and biodiversity loss can appear distant in both time and space, far from the everyday lives and practices of those in the western world. They can become abstractions from the places we inhabit, irrelevant to our daily lives and routines. As Doyle (2019, p.42) highlights, “making climate change meaningful means making it relevant to people's everyday lives and social practices.” I suggest that the location of these case studies has a bearing on the extent to which an experience with the artworks hold a

relevance for an audience. Both the *Deep Time Walk* and the *Time and Tide Bell* are experienced amongst the comings and goings of a local environment. The *Deep Time Walk* left imprints on the walking landscape. Some participants chose to walk routes they were well acquainted with: questions stimulated by a deep time perspective were asked of places encountered in everyday routines, integrating the Anthropocene into the familiar. Embedded in a landscape, the *Time and Tide Bell* becomes an enduring and everyday signal of connection between community and coast.

Though Austen's work was not installed in an established cultural institution, my study suggests that the temporary gallery environment elicited some comparable dynamics. There was evidence that normative ideas of engaging with art came into play for some participants. Several individuals who encountered the *Coral Empathy Device* expressed attempts to achieve what they considered to be an intended interpretation, which may have functioned to curb potential meaning-making pathways. Given the absence of these concerns in the other two case studies, both of which are located outside of traditional art spaces, it is worth considering the extent to which its location in a pseudo-gallery space may have removed the *Coral Empathy Device* from the everyday through which meaning-making so often occurs (Foreman-Wernet and Dervin, 2017; Foreman-Wernet and Dervin, 2016). These insights suggest that moving this kind of work beyond institutional art spaces may go some way to eliminating barriers to access and illuminating Anthropocene themes in our everyday practices and places. This adds weight to the assertion from both Doyle (2011) and Burke et al. (2018, p.103) that "integration of the artwork within the local environment and its integration into people's everyday lived experiences appears to play an important role in engaging those who might not otherwise be motivated to learn about climate change."

Another dimension to examine here is temporal duration. The three artworks I examined in this study vary in the extent to which they endure in place or, particularly in the case of the *Deep Time Walk*, whether the opportunity to access the work endures. The *Coral Empathy Device* was installed in Leeds for a period of one week, located a distance from the city centre and thus, most visitors had to make a special trip to see the work. Few dwelled in the space for long after spending a few minutes with the work, and no repeat visits were made. As a smartphone app, the *Deep Time Walk* overcomes such restrictions to some extent, as walkers may revisit the app again and again if they wish, as some participants in this study did. The *Time and Tide Bell* is fixed in place and endures in the daily lives of those that dwell in its locale. Though opening a smartphone app involves an active choice, for dog walkers in Morecambe or Cemaes, a daily trip along the beach means a daily encounter with the bell. As "even the most devoted person can only allow it so much time outside the routines of work and daily life"

(Clark, 2015, p.191), locating an artwork within an everyday landscape goes some way to integrating it into these routines.

It is interesting to consider these variable durations in light of the extensive temporal scales conjured up by the Anthropocene. Davis and Turpin (2015, p.51) caution that the implications of this new geological epoch are so vast that “it is best not to approach such an immense reality head on, but to come more slowly and from the back.”

Repeated journeys with the *Deep Time Walk* offered Catherine different ways of understanding the content over time. Its endurance in the landscape allows the *Time and Tide Bell* to take on multiple layers of significance, becoming a gauge of distance or a social meeting point. Further work would be needed to consider this in depth, but I am intrigued as to whether an enduring opportunity to access a work, and indeed, repeated encounters, affords this slowness and subtlety that Davis and Turpin suggest is important.

8.4 Sites of transformation

All three artworks configure the Anthropocene as a juncture: an opportunity for reflection, reconfiguration, and renewal. At a time of “unprecedented looking away” (Haraway, 2016, p.35), each places a spotlight on our entanglement with nonhuman nature and attempts to evidence phenomena that challenge our perceptive capacities. Through a cultivation of interspecies empathy, Austen’s *Coral Empathy Device* encourages contemplation of our role in the plight of other beings of the Anthropocene. In particular, the work positions the body as a site of knowledge, employing sensory means to dismantle the self/other and human/nature boundaries. The *Deep Time Walk* illuminates our embeddedness through an adjusted temporal perspective, apprehended through the rhythm of walking. A detailed, dramatised narrative blends arts and sciences into a holistic experience for mind and body. The *Time and Tide Bell* hints at the relationship between land and sea, humanity and our environment, a sonification of tidal movement subtly drawing attention to the gradual rise of the waters. All three case studies attempt to facilitate an active harnessing of the opportunities presented by the Anthropocene.

However, the differences in their approaches to the Anthropocene shape the nature of their interventions. The *Coral Empathy Device* and *Deep Time Walk* both approach the Anthropocene as an issue of ontology: a problematic conception of the human place amongst nonhuman nature underpinned by dualisms and separation that can be addressed through a fundamental adjustment of ontological perspective. As such, the site of intervention these works focus on, so to speak, is the individual: these two

artworks endeavour to stimulate a renewed understanding of the self as an ecological being. Austen's work strives to illuminate the connection between self and other through a haptic, sonic and aural cultivation of empathy. The *Deep Time Walk* offers an alternative conception of time in order to reveal our place within a vast Earthly history. In both cases, the Anthropocene is to be faced as a unit of one, as the form of the work reflects its intended site of transformation. I suggest that the solitariness of these experiences sits at odds with a sense of connectedness that they endeavour to promote and limits the scope of meanings that may emerge, whilst the focus on ontology may distract from the collective action necessary in the face of the Anthropocene (Horn and Bergthaller, 2020).

This research has indicated that the solitary nature of these experiences precludes opportunities for dialogue which participants in both cases expressed a desire for, most commonly to enable the exchange of ideas during and following their encounter with the work. The process of developing understanding in experiences with art often occurs through dialogue, with the work itself, but also importantly, with other people (McKay and Monteverde, 2003). Social dimensions of art experiences enable an exchange and renegotiation of meaning that can deepen such encounters. McKay and Monteverde (2003, p.43) propose that multiple voices lead to "a sense that 'I see more because I now also see what you see'", in which I contend the idea of 'seeing' can be read as sensory experience more broadly. When insights are shared, the potential for meaning is expanded: a conversation with associates about her experience with the *Coral Empathy Device* led to a refinement of how Abigail understood the notion of empathy, for example. Though this is perhaps a small instance of impact through dialogue, it held a significance for Abigail, and potentially for the individual she was in dialogue with.

Incorporating an intersubjective dimension more deliberately into the experiences with the *Coral Empathy Device* and the *Deep Time Walk* may have offered participants an opportunity for dialogue through which to explore, develop and extend meaning. Though the *Deep Time Walk* makes attempts at connecting a walker with broader communities – of Earth Charter signatories, Transition Towns, or via courses at Schumacher College – my conversations with participants did not surface any evidence of acknowledging these 'What Next' signposts. Instead, I found that participants chose to discuss the work with friends, and several made strong recommendations that others undergo the experience themselves. This appetite for and appreciation of intersubjectivity aligns with the findings of Hudson Hill (2020) who highlights the value that an audience placed on opportunities for dialogue during their visit to the *Anthropocene* exhibition at the Art Gallery of Ontario.

Furthermore, dialogue itself has been presented as a site of transformation. McDonnell (2005, p.73) is unflinching in his assertion about the centrality of dialogue in what can be achieved through creative endeavours:

In 20 years of activist theatre I do not believe I have raised anyone's consciousness, or liberated them, or brought them new understandings. I have, however, been changed with and through others, and they, I hope, with and through me. I have with and through others, in a process marked by mutual need, gained new understandings, had my 'consciousness' raised.

Though McDonnell's focus here is on activist theatre (rather than interactive art per se), I propose that it holds for a broader set of creative work. Intersubjectivity and dialogue are important routes to shifts in perspective. A principal means to changing the world is through engagement with others. In their focus on the individual, the *Coral Empathy Device* and the *Deep Time Walk* overlook the role of intersubjectivity in achieving their intended ambitions.

The solitariness of the encounters with these works is intriguing given the ambitions of their creators to sensitise us to our interconnectedness. Though Austen's *Coral Empathy Device* endeavours to forefront our connection with another species, and the *Deep Time Walk* embeds us within an extended ecological timeline and encourages an engagement with our surrounding landscape, to some extent both cut us off from human interaction in the moment of experiencing. Gablik (1991) argues that socially or ecologically grounded art is only viable when it strives to overcome separation. She stresses that such work should focus on:

Emphasizing our essential interconnectedness rather than our separateness, ... evoking the feeling of belonging to a larger whole rather than expressing the isolated, alienated self (Gablik, 1991, pp.5–6).

Though both works attempt to connect us to nonhuman nature, it is worth considering to what extent a sense of connection is curtailed when an audience is actively isolated from other human individuals. Can we grasp interconnectedness through an experience within which we are separated from others? By necessitating an individual experience, the *Coral Empathy Device* and *Deep Time Walk* may be undermining their attempts to bring us into community with the natural world.

Issues of this individualising form aside, there remains a more fundamental question about this approach to the Anthropocene, posed by Clark (2015, p.18, emphasis in original):

What if ... this awareness of interconnection could not be assumed to be an effective agent of change – in other words, *how far does a change in knowledge and imagination entail a change in environmentally destructive modes of life?*

This question, asserts Clark, goes to the heart of ecocriticism, much of which is predicated on the notion that reconfigured perspectives through cultural interventions will lead to action in line with an environmentally and socially just future. Approaching the Anthropocene as an issue of ontology involves an assumption that appropriate ontological shifts will result in significantly different modes of living with, and in, 'nature'. Though I do not propose to answer Clark's question here, I do want to look more closely at an approach to the Anthropocene that isn't necessarily built upon this assumption, but begins to speak to Horn and Bergthaller's (2020) concerns about collective action – that we begin to see glimpses of in the *Time and Tide Bell*.

Though the *Time and Tide Bell* does not necessarily resist an ontological approach to the Anthropocene, it places a particular focus on collective action, facilitating the development of communities at different scales. The installation of a bell prompts the formation of the first community in this collection, as individuals come together to navigate the financial, political and procedural hurdles necessary to bring a sculpture to their town or village. As owners of a bell, this community then becomes part of a larger network of other coastal locations that host a bell – a network which is currently working together (with the Time and Tide Bell Organisation) on a nationwide creative commission, intended to unite the groups further still and amplify the message about changing sea levels. Further groups have emerged around the bells, using them as sites for citizen science initiatives (with investigations currently underway in Appledore, Morecambe and Mablethorpe, led by the Marine Biological Association), and yet another, predominantly online, community is connected through the education resources that are being employed at schools and for home learning. Outdoor learning and citizen science both offer the potential for cultivation of a different form of community, crossing the boundary between human and nonhuman, as human individuals interact and commune with the nonhuman beings inhabiting the locale of these sculptures.

These communities, and the multiple connections they weave, may serve an increasingly important purpose in the face of the Anthropocene. As Franzen (2019) explains, in times of heightened change there is a risk that people seek protection in armed force and tribalism. The best defence against such a response is, Franzen suggests, investment in functioning democracies, legal systems, and communities. Research suggests that local networks and social cohesion enhance the resilience of a community with regard to environmental change (Prior and Eriksen, 2013; Aldrich and Meyer, 2015). Here, resilience is not assumed to entail a 'bouncing back' following a disaster event or period of disruption, but rather indicates a capacity to adapt to shifting conditions, and to realign lifestyles within ecological realities. Such adaptive capacities will become increasingly necessary to navigate the Anthropocene, which is destined to be characterised by climate extremes, environmental degradation, and scarcity of

resources. Moreover, the decision-making context for this adaptive action, which is characterised by deep uncertainties and contested values, demands a gathering of communities for negotiation, preparation and knowledge sharing (Mach et al., 2016).

As a gathering point and catalyst for active engagement with place, these sculptural bells harbour the potential to call us into relationship with human and nonhuman others and to act as a platform for collective action. They offer an example of what Neal (2015, p.8) terms ‘transitional art’.²⁴ This type of work emerges from a practice that aligns closely with the ambition of the Transition Town movement: working in community to reimagine and remodel society in the face of Anthropocene challenges. Transitional arts practices serve a community by facilitating collaborative and participatory processes to build alternative futures. Interestingly, research by Foxwell-Norton (2017) points to the ways in which coastal communities are at the centre of healing the division between ourselves and our understandings of nature. Many coastal community initiatives are, she argues, “enacting, elevating and demanding an urgent recognition of ecology, in the fullest sense of human-nature connectedness” (Foxwell-Norton, 2018, p.9). Embedded in a locality, the *Time and Tide Bell* may come to catalyse and facilitate more deliberate collective activities of resilience-building and future-crafting.

8.5 In a broader context

None of these artworks were commissioned: no individual, local authority, developer, or other institution contracted the artists to create these works for specific purposes or to fulfil particular objectives. Each emerged from an interest and desire of the creators. The *Coral Empathy Device* was conceptualised during a workshop in Bergen and constructed whilst Kat Austen was in residency at NYU Shanghai Gallery. The development of the *Deep Time Walk* was driven by a small team from Schumacher College and their American collaborators, funded by two successful crowdfunding campaigns, the second of which was matched by the Heritage Lottery Fund. The *Time and Tide Bell* grew from a personal interest of Marcus Vergette, with the casting and installation of the sculptures funded in part by the Arts Council, but largely by private funders and the communities that became owners of the works. The broader *Time and Tide Bell* programme has now secured financial support from the National Lottery Community Fund until 2022. Interestingly, though it was not a deliberate decision to focus this study on non-commissioned pieces, it may perhaps reflect the state of the broader landscape of Anthropocene art, suggesting that such work is likely to emerge

²⁴ Neal (2015) proposes that ‘transitional arts practice’ brings people together, maximising relationships for action in the context of global challenges.

directly from artists with a personal interest in this field, rather than through cultural policy mechanisms or as a response to overwhelming demand from mainstream funders (though there are, of course, some exceptions).

This lack of demand is reflected in the cultural landscape more broadly. Ghosh (2016, p.11) points to the failure of the cultural sector to engage with climate change, suggesting it is complicit in “modes of concealment that prevented people from recognizing the realities of their plight”. Our present day can be characterised, he suggests, as a time of Great Derangement, when artists across forms, geographies and generations appear blind to the existential threat looming over humanity and swathes of other beings. Here I want to draw on some relevant extracts from my conversation with Peter Gingold, producer and national coordinator of the Time and Tide Bell Organisation. Gingold has been active as a producer in the field of climate art for over a decade. In 2005 he founded TippingPoint, an organisation that facilitated collaboration between artists and climate scientists and commissioned artistic work that engaged with climate change. Gingold led the initiative until it disbanded in 2017, before moving on to his current role at the Time and Tide Bell Organisation. Though, like Ghosh (2016), he decries the dearth of mainstream artists who hold a consistent focus on Anthropocene issues, he acknowledges that there is a “profound artistic problem... How on Earth do I write something or write a play or produce a visual work or something that isn’t preachy?” (Interview with Gingold, 24 October 2019). He acknowledges a very real barrier to creative engagement with many dimensions of the Anthropocene, as time and again, theorists and practitioners report that didactic approaches to work exploring threads of the Anthropocene are rarely effective in engaging with or moving an audience (Crossick and Kaszynska, 2016).

Initially, Gingold harboured a quiet ambition that TippingPoint might become “the midwife to whatever the 21st century version of *Silent Spring* might be” (Interview with Gingold, 24 October 2019). Carson’s *Silent Spring* (1962) – an examination of the dangers associated with widespread pesticide use – is widely credited with igniting the environmental movement in the latter half of the twentieth century (Lytle, 2007). Like myself, Gingold held on to the idea that one exemplary, extraordinary, artwork could catalyse a similar, now even more crucial, ecological awakening, if only we waited long enough for it to emerge or aligned the multiple variables appropriately. Yet, no such work has been forthcoming and time is no longer a luxury to be squandered in the face of climate change and biodiversity loss. Given this, rather than hold out hope for one watershed work, Gingold suggests there is value in cultivating a rising tide of artworks that endeavour to play a role in assisting our understanding and navigation of the Anthropocene.

As my research suggests, the degree to which these creative interventions resonate varies between individuals. Not every intervention will land meaningfully with everyone. Though several participants struggled to connect with the *Coral Empathy Device*, the experience offered valuable provocations for Abigail, leading to a renewed apprehension of empathy. Despite forming a central aspect of the experience that was appreciated by many, both Daniel and Daisy considered walking to be a distraction from the narrative of the *Deep Time Walk*. Each of them expressed a preference for a learning style that this work did not align with. And whilst the *Time and Tide Bell* functions as a pedagogical platform for some in the coastal bell communities, it was assumed to be a mysterious warning mechanism by others. In some cases, this lack of resonance may have arisen through an absence of signposts and cues designed to enhance the accessibility of the artwork. Some theorists, including Williams (2013, p.20), take issue with the idea of accessibility with regards to art, suggesting that it is synonymous with a lack of inspiration and value:

There is the kind of publicly accessible environmental art that speaks clearly to a wide range of people, but is often subject to didacticism or well-intentioned banality ... the more aesthetically sophisticated works of the poetic imagination, which are nonetheless sometimes seen as eliding the ethical imperatives of publicly communicating the findings of science in an age of heightened environmental risk.

Such concerns that accessibility – to offer signposts and contextual information – and ‘aesthetic sophistication’ are incompatible appear to underestimate the degree to which our aesthetic perception can be heightened by knowledge (Wind, 1960). A deprecation of accessibility, and a conflation of accessibility with didacticism, hinders the closer investigation of how Anthropocene art may play a significant role in the way communities might meet and weather the challenges of our current epoch.

Even where these works resonate significantly, lines of causality are notoriously tricky to draw, as experiences are woven together: they do not operate in isolation. Memories of the *Coral Empathy Device* and the associated presentation are recalled when marine scenes appear on the television, or during incidents that demand an empathic response. Traces of a renewed temporal perspective garnered through the *Deep Time Walk* remain on the walking landscape. The *Time and Tide Bell* intervenes in a landscape, offering new possibilities for engaging with the local community, both human and nonhuman. These artworks have become part of an individual’s personal archive and, to a greater or lesser degree, affect a reconceptualisation of the world. The experiences have adjusted (or not) the frame through which we see the world (Burke et al., 2018). This ecological perspective, acknowledging a network of intertwined experiences, “connects art to its integrative role in the larger whole and the web of relationships in which art exists” (Gablik, 1991, pp.7–8). Creative interventions are enmeshed within a much broader

sociocultural context. Each encounter is one stitch in the fabric of causality: it is the *cumulative* effect that holds significance.

Recognising and working in conjunction with this context may offer an enabling context for Anthropocene art, supporting an experience to become meaningful beyond the moments with the work itself, leaving a legacy of sorts. As Idema (2014) points out, there persists an assumption that simply being in the presence of a work of art will lead to a rich and meaningful experience. Yet, as this study has illustrated, experiences with art become part of a perpetually evolving tapestry that is the personal archive, colouring the resonance of subsequent experience and allowing retrospective revisiting of past experiences. Anthropocene art may be additionally impactful when it explicitly acknowledges and embraces its place in a broader context, actively drawing upon and connecting to other activities and interventions. Such an infrastructure may afford opportunities for dialogue, aiding the sharing of experience and the continued illumination of an encounter. It may also hint at onward pathways, offering routes to individual and collective action through links to projects, interventions, and other initiatives.

The three case studies examined in this project invest to different degrees in laying the groundwork for legacy beyond the art experience itself. In its current phase, the *Time and Tide Bell* is cultivating an enabling context that reaches out into the broader landscape of change-making activity. Through initiatives including the education programme, home-learning resources, citizen science investigation and brokering a national network, this work is establishing an extended legacy, concurrently supporting multiple touchpoints with the sculptures themselves. The *Deep Time Walk* gestures towards a legacy through its ‘What Next?’ prompt and the organisation has started to actively establish an extended network through its curation of a coordinated set of guided walks – and offering training for the guides – which coincided with the Global Climate Strike in September 2019. In contrast, Austen offers the *Coral Empathy Device* as an independent experience, a work for individuals to interact with, “have a think and go on your way” (Interview with Austen, 27 November 2018). It is interesting to consider the extent to which offering additional context and pointing to potential routes to agency may have resulted in different participant experiences with the *Coral Empathy Device*. As pointed out by Sommer et al. (2019), even where an audience has aligned intentions, an art experience alone cannot be expected to affect a change in behaviour.

8.6 Recent developments in practice

During the course of this study, and despite the escalation of other global events including the Covid-19 pandemic, Anthropocene art initiatives in the United Kingdom continue to emerge, and the field has developed in ways that pertain to this discussion. Whereas previously Anthropocene art projects have arisen from individual artists and arts organisations as isolated activity, *Season for Change* was established in 2018 to assemble such work under a united message. This festival initiative endeavours to encourage and showcase creative work nationwide that celebrates the environment and inspires urgent action on climate change. It was initiated from the What Next? movement and is now driven by ArtsAdmin and Julie's Bicycle. Though unsuccessful in getting financial support for its inaugural year in 2018, *Season for Change* secured funds from the Arts Council for a 2020 revival. In light of the pandemic, the programme has been postponed until 2021. However, throughout 2020 the initiative has convened conversations, developed commissions and published a toolkit to equip and empower artists and creative practitioners to contribute to the open programme of this festival and to embed sustainability into their own practice. Importantly, many of their conversations have focused on the importance of climate justice in the arts, addressing ethical and political dimensions of climate change that have been long overlooked.

The toolkit includes information and guidance on operational sustainability, organisational climate action, and networks across the sector, as well as developing and programming creative work that addresses Anthropocene themes. Regarding the latter, three key principles are outlined: listen to and speak to your audience in advance; be clear about the impact you want to make; work with collaborators to drive positive change and shape your work (ArtsAdmin and Julie's Bicycle, n.d.). This guidance is succinct, illustrated with case studies, and accompanying webinars have offered practitioners a growing resource to draw upon. In encouraging a relevance of content, the embedding of work within a community and establishment of collaborations with existing initiatives, these principles demonstrate a keen acknowledgement of how creative works operate within a broader context. Happily, they align with some of the key findings from this study.

Two findings from this research, however, remain unaddressed by this toolkit. Firstly, the need to collapse the perceived gulf between aesthetic and contextual information. This may not be a message universally required, but this study indicates that there can remain a dissonance between what context an artist is willing to offer, and the information required by an audience to enhance their experience with an artwork. Artists must not shy away from offering such context, particularly as it begins the process of drawing attention to an essential interconnectedness. Secondly, the creation

of space and opportunity for dialogue and reflection. In the case of both *Coral Empathy Device* and the *Deep Time Walk*, which are primarily solitary experiences, participants expressed a desire for opportunities to share ideas with others. Where this opportunity is absent, it is of course possible for an individual to discuss an experience beyond the site of the work itself, and indeed some participants of this study did so. However, offering platforms specifically for dialogue during or following a solitary experience would recognise the value of discursive interaction for meaning-making and the relational nature of change. This is of particular import considering the weight of the ideas and implications that Anthropocene art engages with.

Another relevant initiative to mention here is Cultural Adaptations, an action-research initiative led by Creative Carbon Scotland, exploring the role of culture in societal adaptation to climate change. Initiated in 2018, the project not only aimed to assist cultural organisations in developing their own adaptation strategies, but also set out to explore how artists can offer new ways of thinking about adaptation to climate change and fresh approaches to its challenges. A core aspect of this latter endeavour is a series of Embedded Artist Projects that saw four artists partnered with four adaptation projects across Europe. These process-oriented collaborations introduce creative perspectives and methods into organisations or initiatives tasked with developing adaptation strategies. In Scotland, artist Lesley Anne Rose was embedded into Climate Ready Clyde, a cross-sector initiative developing an adaptation action plan for the Glasgow City Region. From this, the Cultural Adaptations project is developing a toolkit that will set out how Embedded Artist Projects can be replicated elsewhere. I consider the project to be of particular relevance here as it is seemingly premised upon a rationale similar to notions that run through my discussion of the *Time and Tide Bell*: that artistic intervention may offer a new entry point into the place-based reality of Anthropocene challenges. However, I am intrigued about the intentional nature of the project – as opposed to the more organic development of the *Time and Tide Bell* as a gathering point – and the role that this plays in the impact it may have. Another focus for potential future research.

As the United Kingdom prepares to host the United Nations climate change conference (COP26) in November 2021, artists are already gathering to develop a creative welcome, response, and provocation around the fortnight of global negotiations. Considered the most important climate change conference to date, at which nations will review and revise commitments to limit warming to below 2°C, there has never been a more significant moment for reflection on our place in the world and collective action toward a better future. Art has an important part to play in opening up these negotiations to an extended audience and in rendering its themes relevant beyond the walls of a

conference centre, and it appears that an increasing proportion of the creative sector is beginning to take up the charge.

8.7 Conclusion

In considering the three case studies alongside one another, I have drawn several insights from this study as a whole. Some of these insights concern matters that pertain to experiences with art more broadly. The three case studies vary in how they offer an audience cues, tools and space to forge a meaningful pathway through an encounter with the work. Handing an audience control in the meaning-making process and equipping us with cues to aid us through it, encourages us to take ourselves more fully into an art experience. Within such an experience, different ways of knowing open up the potential for new insights and configurations. Sensory dimensions blend with cognitive to illuminate features of experience that are otherwise opaque.

Approaching the Anthropocene as an issue of ontology points to the individual as the site of necessary transformation. The *Coral Empathy Device* and *Deep Time Walk* reflected this in their form, though study participants suggested that the opportunity for dialogue may have enhanced their experiences. An alternative approach centres on the need for renewed collective action that we begin to see in the *Time and Tide Bell* as it functions as a gathering point and facilitates different activities both locally and nationally. All three case studies illustrate the implicit relationship between artwork and place, though a presence in places of everyday life grounds the Anthropocene more firmly in the here and now. Art can be a powerful tool for existential reflection and collective action in the face of the Anthropocene. It operates, however, in a broader sociocultural context, with legacies activated and extended, or countered and dismissed, by the personal archive and subsequent experiences of an audience. Acknowledging this connectedness may extend the legacies of these artworks.

Chapter 9 Conclusion

In this final chapter I return to the research questions I posed at the beginning of the thesis. These questions guided my inquiry, providing a framework for exploring the empirical materials I gathered, focusing the thematic narratives that I drew out and the thinking I drew on to guide my analysis. The two research questions were as follows:

1. In what ways might experiences with interactive art aid understandings and navigation of the Anthropocene?
2. What can we learn about the impacts of Anthropocene art by listening to its audiences?

My endeavour to address these questions has been outlined in the previous chapters of this thesis, setting the theoretical foundation, discussing the scholarly context, outlining my methodological approach, and exploring the case studies both separately and together. Before addressing each of the research questions in turn, I first offer a brief summary of the thesis structure and content. Following a discussion of the questions, I then outline the contributions to knowledge that this research presents, pointing in particular to my focus on audience experience. I move on to consider the limitations of the study before suggesting some possible avenues for future research that have become apparent. I end with a reflection on the personal journey of this project and how my ideas about knowledge have been transformed.

9.2 Overview of the thesis

Following the introductory chapter, I began with a discussion of the Anthropocene concept in Chapter 2, outlining its origins and exploring the various theoretical conceptualisations of this new epochal term. I considered the ways in which the process to formalise this unit of time in the Geological Time Scale has unearthed both epistemological and ontological debates, harbouring implications far beyond the field of stratigraphy. The term has migrated across the academy, naming journals and conferences, and into popular culture, appearing in songs and music videos, titling podcasts and topping the bill at film festivals. Locating the human in deep time, the Anthropocene presents a paradox, reducing humanity to less than a geological moment, whilst also setting humanity apart as an unprecedented geological force. This enigma of the Anthropocene operates as a juncture, emphasising the multitude of potential futures, and implicating humanity in the choice of pathway adopted. Chapter 2 concludes by asking how the opportunity of this juncture may be mobilised.

In Chapter 3 I turned to art as a potential route to engaging with the rich ideas and possibilities of the Anthropocene concept. Art is held to harbour potentials that are valuable in this new age of the human. Artistic endeavour has offered audiences opportunities to perceive phenomena that resist direct human perception, engaging senses that are frequently undervalued in knowledge creation. I also highlighted artworks that attempted to envision alternative futures, others that functioned as a regenerative intervention, and some that evidenced socio-ecological injustice. Many of the creative pieces explored in Chapter 3 gestured towards the relationship between human and environment, variously foregrounding an entanglement that upends the notion of a human/nature split. Ultimately, I pointed to the lack of attention paid to the audiences of these works and questioned the extent to which we can make claims about Anthropocene art without a better understanding of how it resonates with its publics.

I offered an outline in Chapter 4 of how, methodologically, I proposed to address this gap in the research. Within a paradigm of critical realism, intuitive inquiry offered the focus and flexibility required to put the study participants at the centre of the research and to follow the strands of their experience as they emerged. I argued that an exploration of three case studies would offer a valuable level of detail whilst remaining multifaceted in its considerations. Conversations with research participants yielded rich insights that I developed into thematic narratives, looping back into the conversation material every so often as lines of inquiry were developed and refined.

Chapter 5, Chapter 6, and Chapter 7 focused on each case study of interactive Anthropocene art in turn. First, I discussed how the *Coral Empathy Device* (Austen, 2016), a wearable sculpture that translates the experience of coral for human perception, is an attempt to stimulate action in the face of anthropogenic climate change. Artist Kat Austen eschews codified knowledge in favour of a sensory cultivation of empathy as a route to interrogate the perceived boundary between self and other and to bridge the gulf of a human/nature dualism. Conversations with research participants suggested that whilst Austen had clear expectations with regards to audience experience with the *Coral Empathy Device*, these were not uniformly realised. An absence of contextual information led to confusion for some, and it was the integration of sensory experiences with information from an additional presentation that offered participants a more tangible grasp on their experience with the work.

Secondly, I introduced the *Deep Time Walk* (Deep Time Walk C.I.C., 2016), a smartphone app that narrates a dramatisation of the 4.6 billion year history of planet Earth as the listener walks a distance of 4.6 kilometres. I explored how the work employs the physicality of walking to offer a visceral, felt sense of the human place within geological time, and how its technological form offers an accessibility and breadth of experience. Research participants reported an altered sense of perspective

that, for some, stimulated emotional responses and introduced elements of the aforementioned Anthropocene paradox. I drew out insights that point to how the interplay between narrative, landscape and walker shapes the experience and illuminates aspects of both the story and the surroundings. Conversations highlighted that whilst the experience is intended to underscore a connection with a broader ecological ‘family’, some participants found the solitary nature of the experience limiting.

Chapter 7 presents the final case study of this research. The *Time and Tide Bell* (Vergette, 2007) comprises a series of bells located around the coastline of the United Kingdom that are rung by the movement of the high tide. In doing so, they draw attention to the connection between land and sea, community and environment, and provide a marker for future rises in sea level. I suggested that as gifts to the communities that host them, these works exhibit characteristics of what Lacy (1995a) calls ‘new genre public art,’ involving aspects of collaboration between artist and community. For this case study I drew on conversations with individuals linked to the project in some way, in particular those within the host communities. I demonstrated that the work becomes imbued with layers of meaning, drawn by those who encounter it and the landscape in which it sits. Ideas of place and identity run through my discussion, and I concluded by exploring how the bells function as gathering points.

I then examined these three case studies alongside each other, offering another way of thinking about these Anthropocene artworks. Chapter 8 began with a consideration of how these three interactive works engage different ways of knowing in their approaches to themes of the Anthropocene and how this shaped participant experiences. I suggested that the presence of cues, tools and space are all important in enabling an audience to forge a pathway of meaning through an experience with art. The extent to which these artworks are embedded into and endure in place is material in how they might resonate with audiences, allowing for different degrees of exposure and relationship development. I went on to propose that the chosen sites of transformation varied between these three works and that this was reflected in their form. Locating these cases in a broader context, I suggest that the challenge of avoiding didacticism when creating Anthropocene art may have limited the size of the field. I proposed, however, that acknowledging art as a part of a broader array of experience may ensure extended legacy of Anthropocene artworks.

9.3 Addressing the research questions

9.3.1 In what ways might experiences with interactive art aid understandings and navigation of the Anthropocene?

This research endeavour has gone some way to illuminating ways in which experiences with interactive Anthropocene art may aid understanding and navigation of the current epoch. As I set out in Chapter 8, each of the case studies I have considered offers different routes into fathoming the Anthropocene and the adjusted perspectives that it presents along temporal, spatial and species lines. They demonstrate how interactive art offers sensory experiences that direct our attention in ways often underserved in our day-to-day, centring the body as a site of knowledge development. These sensory dimensions of Anthropocene art offer a route to grasping scales otherwise obscured in our awareness, and to cultivate dispositions that acknowledge the intimate relations between human and nonhuman (Hawkins and Kanngieser, 2017).

Though opening up these alternative forms of knowing is valuable, this research has suggested that care must be taken not to replace one knowledge hierarchy with another. It is the privileging of one form of knowledge over others that is particularly problematic, as became clear in Chapter 5. Participants who encountered the *Coral Empathy Device* suggested that they found the experience confounding when it consisted solely of haptic, olfactory and audio sensation. Only when offered additional context and explanation did the artwork begin to resonate with these participants. Though Austen's focus on non-codified knowledge challenged the privileging of its explicit, rational counterpart, it also acted to uphold an alternative, but equally unhelpful, knowledge hierarchy. This, I argue, presents a barrier to engagement, and limits access to the Anthropocene ideas that the work may conjure up, query or dismiss.

These barriers to engagement are relevant beyond Anthropocene art, and spill into broader debates about accessibility of art and audience experience that I have not had the scope to examine in detail within this thesis. However, I suggest that interactive Anthropocene art that takes counsel from good practice regarding audience accessibility will have taken the first step to aiding an understanding of epochal intricacies. It is important for me to stress here that this idea of ensuring accessibility is not synonymous with imposing didacticism. Including contextual information alongside an artwork does not necessarily serve to dictate a specific interpretation, nor does it remove the challenge and intensity of an experience with the work. Rather, it offers an audience the option of drawing from a broader landscape of information in their meaning-making process. To enhance accessibility is to open up a multiplicity of pathways to understanding.

Yet, as Clark (2015) cautions, we cannot assume that an understanding will necessarily lead to associated or responsive action. This is not to dismiss the value of understanding in and of itself, but in order to address the second part of this research question regarding a *navigation* of the Anthropocene, this assumption is something to interrogate. Navigation, as used in the research question here, involves finding a path through, and thus features a deliberate, active doing. To illustrate, I draw on Haraway (2016, p.132) who offers the idea of ‘ongoingness’, that is:

Nurturing or inventing, or discerning, or somehow cobbling together ways for living and dying well with each other in the tissues of the earth whose very habitability is threatened.

Though Haraway herself expresses dislike of the Anthropocene concept, I hold that her figuration of ongoingness offers a pathway through the challenges of our current epoch. Ongoingness involves rethinking our relationship with other beings and with the lands we inhabit, and encompasses a deep acknowledgment of entanglement. It involves looking directly and unflinchingly at the state of things and making a commitment to response-ability in the face of current sobering circumstance.

The three case studies in this research each demonstrate, in different ways, how experiences with interactive Anthropocene art may contribute to such an ongoingness. Austen’s *Coral Empathy Device* endeavours to call our attention to the *need* for ongoingness, through the forces of empathy, with an assumption that an awareness of this need will open up insights into the *hows* of ongoingness. Similarly, the *Deep Time Walk* employs temporal scales in its endeavour to highlight the imperative for alternative modes of living with and alongside those with whom we share the planet. However, as emphasised earlier, awareness of an urgency is not necessarily sufficient for active realignment of ways of living. This assumption overlooks the importance of agency. The capacity to act from an awareness requires knowledge of, and access to, necessary tools and resources. Acknowledging this, the *Deep Time Walk* offers signposts to routes through which an ongoingness may be enacted, specifically the Transition Town movement.

The *Time and Tide Bell* begins to offer a model of Anthropocene art that establishes what we might consider to be an enabling context for ongoingness. As a gathering point, these sculptures – aided by the organisation that has been established to support the development of the project – act as a platform for activities that may contribute to community resilience. Such resilience is becoming increasingly important in the face of the Anthropocene, particularly with regard to coastal communities (Armitage et al., 2017). These activities, both those that are facilitated and those that result through a more organic assembling, contribute to a community-building and placemaking that enacts an ongoingness. My research suggests that it is through an explicit

acknowledgement that the artwork is part of a broader context – of audience, place, and broader cultural activity – that interactive Anthropocene art persists in experience and may aid a navigation of our current times.

These are processes that may remain subtle, intervening over time, developing over months and years. This is not a transformational moment, but part of an interdependent network of intervention and association. A single artwork on its own may achieve little in the face of complex Anthropocene challenges. But it is the accretion of moments, and their interaction, that is significant. In line with this, Neal (2015, p.77) suggests that if transitional arts practice were an animal, it “might blend into the landscape like a chameleon, undeniably present, but virtually unseen”. Interactive Anthropocene art may aid our navigation of the Anthropocene subtly, quietly, but by operating as part of a complex, layered network of causality that supports our discovery of a pathway through the challenges to come.

9.3.2 What can we learn about the impact of Anthropocene art by listening to its audiences?

Conversations with participants who encountered the artworks considered in this research offered rich and wide-ranging content that led to insight into not only the work itself, but to how an experience with the work becomes a greater or lesser part of a personal archive. Meaning was always created through these personal archives, whether the work failed to land with the participant because of their preferred learning style, or takes on meaning gleaned from the local area that a participant had to travel through. Conversations also revealed that there must be enough space within the work for an audience to forge a meaning-making pathway. This is a level of detail and texture that could not have been gleaned from a single researcher encountering the work and considering their own experience, no matter how comprehensive. Listening to audiences allowed me to unpick how this art is understood through the lenses and frames of individuals and thus how the Anthropocene is fathomed through similar lenses and frames.

It also became clear that dialogue is considered a valuable process when dealing with Anthropocene themes. Participants expressed a desire for intersubjectivity in processing their experience, to open up other avenues of meaning, create additional associations and share insights. In some cases, participants expressed that our research conversations had allowed them to consider their experience anew, unpicking ideas and following trains of thought. This suggests that offering opportunities for intersubjectivity, or even facilitating dialogue, within or alongside interactive Anthropocene art, may prove

valuable for audiences and their meaning-making journeys. This finding aligns with assertions of other research that involved engaging with audiences of Anthropocene art, including an exploration of community-based art project *Bird Yarns* (2012) by Burke et al. (2018) and Hudson Hill's (2020) study of the *Anthropocene* exhibition at the Art Gallery of Ontario.

Research conversations indicated that place is an important dimension of experiences with Anthropocene art, far more so than I had appreciated prior to conducting this study. Firstly, the environment within which the work is encountered plays a role in the meaning-making process. An interplay of location and artwork colours an experience to varying degrees, specific examples of which were offered in the discussions of both the *Coral Empathy Device* and the *Deep Time Walk*. This study also aligns with assertions from Doyle (2011), Burke et al. (2018) and Sommer and Klöckner (2019) that displaying Anthropocene art within institutional art spaces abstracts these works, and meanings drawn from them, out of the everyday. As such, works of art that deal with issues that could not be more relevant to our current lives and times, lose relevance. The study presented in this thesis supports calls for a reintegration of Anthropocene art at the local level in ways that more carefully link to the everyday and situated experiences.

A final point that emerged through conversations with participants is that experiences with interactive Anthropocene art are subject to the same challenges as any and all art experiences. It was made clear to me that there can be no flirtation with the idea that Anthropocene art may act beyond the limits of broader art engagement. As I outlined in Chapter 8, context and signposting are important tools for audience agency when it comes to meaning-making in experiences with art. As the body of artwork engaging with challenges of the Anthropocene continues to grow, it is increasingly important that artists, curators, producers, and cultural policymakers, first acknowledge (and then hopefully address) the broader barriers to engagement with art. The results of my study ultimately suggest that to shore up creative work that may aid our navigation of the Anthropocene we must look again at how audiences access, engage with, and create meaning through art.

9.4 Contributing to the body of knowledge

The contribution that my research makes to the body of knowledge about Anthropocene art is threefold. Firstly, it adds an important distinction to the idea of multiple knowledges with regards to Anthropocene art. In Chapter 3, I set out some of the roles that art can play in our understanding and navigation of the Anthropocene. The case studies examined in this research project evidence a number of these roles, namely

making perceptible the imperceptible, revealing entanglement and embeddedness, and engaging the senses. This latter offers different ways of knowing, beyond solely the intellectual and visual that have tended to dominate Western culture. The value of Anthropocene art that plays with multiple ways of knowing has been articulated by various scholars (Galafassi and Tàbara et al., 2018; Hawkins and Kanngieser, 2017; Duxbury, 2010). My research adds essential nuance to this articulation, proffering a cautionary note regarding the risk of recreating alternative knowledge hierarchies and underscoring the importance of the interplay of these different ways of knowing versus one being isolated from all others.

Secondly, this research addresses the significant gap in the literature that considers Anthropocene art: the audience perspective. As I set out in Chapter 3, there is a growing body of research regarding Anthropocene art, but little of it considers an audience beyond the author themselves. I suggested that this is an unfortunate deficit that risks overlooking the texture and nuance that sits beneath the meeting of art and audience, stymying our insights into how art may aid our understanding of the Anthropocene. My research adds to the studies from Hudson Hill (2020), Sommer and Klöckner (2019), Sommer et al. (2019) and Burke et al. (2018), offering a real-world in-practice dimension to the literature that outlines the role art can play in waking us up to the response-ability necessary in the Anthropocene. Moreover, unlike these aforementioned studies, by employing a different approach that focuses on surfacing the richness of audience experience through extended conversations, this research contributes valuable depth and texture to this discourse.

Lastly, my research places emphasis on how Anthropocene art is located within a broader sociocultural context, and, in particular, points to the contribution of active community involvement in realising the potential of these works. By beginning to unpick the notion of different sites of transformation, I have demonstrated the potential precarity of work that is pinned on an assumption that enhanced awareness will lead to a response-ability and action, in particular when tools necessary for agency are not proffered alongside this awareness. The alternative I consider in this research is artwork that speaks to ideas of collective action. Though not precluding the individual dimension of art experience, this work places a focus on intersubjectivity and networks of action. It may actively cultivate and facilitate the gathering of communities, or this might occur organically. An explicit acknowledgement of its place within a broader context means that these creative pieces work with and through other initiatives, groups and processes, navigating the Anthropocene together, rather than alone.

9.5 Limitations of this study

As with any research study, there are limitations that must be acknowledged here. Firstly, the sample size for each case study was modest: 14 participants who experienced the *Coral Empathy Device*, the same number (though different individuals) for the *Deep Time Walk*, and 5 individuals linked to the *Time and Tide Bell* (beyond the artist and producer). Though this research was not seeking to deliver a representative analysis, these numbers curb the breadth of experience that I was able to access and should not be mistaken as representative in any quantitative sense. Moreover, though it was a conscious decision to involve participants who would readily choose to access experiences with artworks such as these – as opposed to recruiting across a population that may never choose to visit a gallery, download a sound walk app, or work to install a sculpture in the local community – the participants represented only a small subsection of potential audiences for these works. Participants of the *Coral Empathy Device* study were primarily staff and students from the University of Leeds. For the *Deep Time Walk*, the mobile nature of the smartphone app meant that participants were far more geographically spread, but most had been reached through my social network channels or those of related organisations. In both cases, this resulted in a limited span of demographic diversity.

In terms of the *Time and Tide Bell*, after struggles to record conversation with passersby that I outlined in Chapter 4, I made the decision to focus solely on testimony from community activators involved in the project. Thus, I had limited reach into these bell communities, speaking to those individuals already deeply involved with the initiative but not those who happened upon the work or passed it occasionally on the journey to another destination. This is particularly of note because, as Selwood (1995, p.243) points out, “the fact that a work is initiated from within the community does not guarantee that it is considered to represent the broader community.” It goes without saying that those living in the vicinity of the bells but unrelated to their installation will have very different relationships to the sculpture, so we cannot take the insights from the community activators as universal.

An additional limitation lies with the initially intended longitudinal dimension of the research. As experiences with art become part of the personal archive, I was originally hoping to explore how they were reactivated, reconsidered or dismissed by subsequent experience. I had planned to speak to *Coral Empathy Device* and *Deep Time Walk* participants one month following our original conversation, and again at six months. However, many of these conversations did not come to fruition – though some participants sent notes via email – and the voluntary and charitable nature of participant involvement made me reluctant to insist. Thus, the longitudinal insights were not robust

enough to offer a valuable contribution to this research study and I refrained from drawing insights along these lines. Future research may consider focusing on this temporal dimension of audience experience, which may only become more relevant as public forums are increasingly colonised by concerns of the Anthropocene.

9.6 Implications for future research

This research points to several areas that are ripe for further research and which would be valuable for the field of Anthropocene art. Firstly, a closer examination of the enabling context for Anthropocene art would complement the findings of my study. This enabling context includes the capacity and capabilities of an audience to engage with an artwork. Whilst I did not dwell on how familiar participants were with encountering art, research by Robidoux and Kovacs (2018) points to claims from artists that better art education would lead to their work being more impactful. Moreover, Gross and Pitts (2015) point to particular audience attitudes that facilitate enjoyment and engagement with art. These attitudes include curiosity and an openness to novelty; a willingness to ask questions; an expectation that not everything will be to your taste; the ability to enjoy without understanding; a desire to be challenged; and a wish for arts to make you think differently. It would be interesting to explore how various audience attitudes and levels of familiarity play out in experiences with Anthropocene art. This avenue may offer further weight to calls for art education to be featured more centrally in school curricula.

Together the three case studies I explored in this research enabled me to explore experiences with Anthropocene art, with a particular focus on the pertinence of sensory stimulation. However, there is scope for future work in examining the sonic dimension of this set of work, and in a broader set of Anthropocene art. Similarly, as the longitudinal dimension of this research study did not come to fruition as hoped, this remains an area to be explored. For both temporary installations and works embedded in a community, tracking how audience experience develops over time would begin to paint a clearer picture of how Anthropocene art functions amidst its broader context. Regarding the former, such an experience may come to inform subsequent encounters or decisions, or it may lie dormant within the personal archive. This current study suggests that the latter – arts embedded in a community – warrants a much closer, durational study, observing how works like the *Time and Tide Bell* settle into and function within a community.

9.7 A personal journey

Finally, I want to dedicate some space to reflection on the personal dimension of this research process, upholding the core of intuitive inquiry which places the individual researcher at the centre. This journey of nearly five years has seen my thinking about art and the Anthropocene, and about knowledge itself, become entirely transformed, through cycles of unlearning and relearning. I was drawn to this research opportunity by a deep conviction that the arts had a role to play in realising a sustainable future. However, the lack of a theoretical arts and performance background (I have a BSc in Mathematics and English Literature and an MA in Leadership for Sustainable Development) meant a steep learning curve and a real case of imposter syndrome.

What I can see clearly now is that this aforementioned deep conviction brought with it a naïve evangelical drive. This naivety upheld assumptions that resulted in me initially disregarding literature that has become central to my final discussion. I began this research process by holding tightly to the notion of art-induced transformational moments: that experience with art held the key to unlocking the ecological self. I began to focus on psychological theory and theories of personal transformation, tracing the idea of sudden worldview shifts through singular encounters. Yet, through the course of this research – the reading, the writing, the conversations it has involved – my focus has moved away from the grand event narrative, of epiphanies and lightbulb moments, to an acknowledgement of engagement and commitment to slow, subtle shifts, and the central role of community. An intuitive inquiry approach allowed me to be open to, and embrace, these changes in direction of my thinking.

It has also been a challenging process of breaking down and reforming my long-held ideas about knowledge. I came into this research process with the intention of finding a solution to a specific problem – it was simply a case of finding out the right information and formulating an argument in just the right way. Yet this research has complicated my understanding of both the problems and the solutions, and indeed these labels themselves. I spent time going round and round in circles, struggling with the urge to find the ‘right’ method and the ‘right’ insights, despite my growing realisation that this was an unhelpful conceptualisation of knowledge. Gradually, this journey has broken down – to some extent – my requirement for logic, structure, and the putative security of a right answer. I stepped out of my previous comfort zone and embraced this new approach in the writing of this thesis.

9.8 To end

This final chapter of the thesis has offered a summary of the research and drawn out the key strands of value for the broader scholarly field. I began with a brief overview of key points from the preceding chapters before revisiting the research questions that were initially set out in Chapter 1. I highlighted the ways that this research suggests experiences with interactive art may play a role in understanding and navigating the Anthropocene. In particular, these are through offering different ways of knowing, often through sensory engagement, by drawing attention to the opportunity of the Anthropocene as a juncture, and acting as a gathering point around which different ways of living may emerge. I explained that by listening to audiences I garnered the value of dialogic aspects of art experience and realised the importance of place. I pointed to three specific contributions to knowledge: adding important nuance to the idea of multiple ways of knowing; filling a significant gap in terms of research into audience experience with Anthropocene art; and stressing the location of Anthropocene art amongst an array of intervention and experience, and the role of active community involvement in realising the potential of these creative initiatives. I considered the limitations of the study and suggested that future research endeavours might focus on the longitudinal dimension of audience experiences with Anthropocene art.

Throughout this thesis I have emphasised the importance of putting the audience at the centre of this research, and of locating Anthropocene art within a broader context of experience. At this current juncture, characterised by unprecedented environmental and social challenges, speaking to those at the coalface of experience and acknowledging the connected nature of our interventions has never been more vital.

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Appendix A Participant information sheet for *Coral Empathy Device*

School of Performance and Cultural Industries



Information sheet for *Coral Empathy Device* Conversations

Before you decide whether to take part in this research project, it is important for you to understand why the research is being done and what it will involve. Please read through the following information and discuss it with others if you wish. Ask me if there is anything that is not clear or if you would like more information.

This research is being carried out as part of my PhD at the University of Leeds, exploring experiences with interactive art. I am requesting your involvement in this research to discuss your experience of *Coral Empathy Device*.

Following your interaction with the work, you will be invited into an informal conversation with me that will last no longer than one hour. After four weeks, you will be invited to participate in an additional conversation with me, on the telephone or in person. An invitation for a further conversation will be made a further two months after that.

Our conversations will be audio recorded. Recordings will only be used for my own research analysis and for illustration in conference presentations and lectures. Any material used from these conversations will be anonymised, unless you formally state that you would prefer to be identified. No other use will be made of them without your written permission. No one outside the project will be allowed access to the original recordings.

Participation is entirely voluntary. If you do decide to take part you can still withdraw at any time. You do not have to give a reason.

For further information, please contact me at pccm@leeds.ac.uk or my PhD supervisor, Fiona Bannon, at f.bannon@leeds.ac.uk

| Project title | Document type | Version # | Date |
|---|------------------------------------|-----------|----------|
| <i>Coral Empathy Device</i> Conversations | Information sheet and consent form | 2 | 20.03.18 |



Consent to take part in *Coral Empathy Device Conversations*

| | Add your initials next to the statements you agree with |
|--|---|
| I confirm that I have read and understand the information sheet dated 20 th March 2018 explaining the above research project and I have had the opportunity to ask questions about the project. | |
| I agree for the data collected from me to be stored and used in relevant future research in an anonymised form. | |
| I understand that relevant sections of the data collected during the study may be looked at by auditors from the University of Leeds or from regulatory authorities where it is relevant to my taking part in this research. I give permission for these individuals to have access to my records. | |
| I agree to take part in the above research project and will inform the lead researcher should my contact details change during the project and, if necessary, afterwards. | |

| | |
|-------------------------|-----------------|
| Name of participant | |
| Participant's signature | |
| Date | |
| Name of lead researcher | Clare Martynski |
| Signature | |
| Date* | |

*To be signed and dated in the presence of the participant.

Once this has been signed by all parties the participant should receive a copy of the signed and dated participant consent form, the information sheet and any other written information provided to the participants. A copy of the signed and dated consent form should be kept with the project's main documents which must be kept in a secure location.

| Project title | Document type | Version # | Date |
|---|------------------------------------|-----------|----------|
| <i>Coral Empathy Device Conversations</i> | Information sheet and consent form | 2 | 20.03.18 |

Appendix B Participant information sheet for *Deep Time Walk*

School of Performance and Cultural Industries



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Information sheet for *Deep Time Walk* Conversations

Before you decide whether to take part in this research project, it is important for you to understand why the research is being done and what it will involve. Please read through the following information and discuss it with others if you wish. Ask me if there is anything that is not clear or if you would like more information.

This research is being carried out as part of my PhD at the University of Leeds, exploring experiences with interactive art. I am requesting your involvement in this research to discuss your experience of *Deep Time Walk*, a 4.6km audio walk.

You will either be provided with a device that has the *Deep Time Walk* application installed, or you may download it onto your own device via the relevant App Store¹. Please select a location that is safe to walk through and allows you to walk at a meditative pace. Use headphones for the best sound quality. Listen to the instructions on the audio carefully before beginning the walk. If you are not able to walk, a 'Mobility Assist Mode' is available.

Following your interaction with the work, you will be invited into an informal conversation with me that will last no longer than one hour. After four weeks, you will be invited to participate in an additional conversation with me, on the telephone or in person. An invitation for a further conversation will be made a further two months later.

Our conversations will be audio recorded. Recordings will only be used for my own research analysis and for illustration in conference presentations and lectures. Any material used from these conversations will be anonymised, unless you formally state that you would prefer to be identified. No other use will be made of them without your written permission. No one outside the project will be allowed access to the original recordings.

Participation is entirely voluntary. If you do decide to take part, you can still withdraw at any time. You do not have to give a reason.

For further information, please contact me at pccm@leeds.ac.uk or my PhD supervisor, Fiona Bannon, at f.bannon@leeds.ac.uk

¹ You will be reimbursed for this download on presentation of invoice receipt.

| Project title | Document type | Version # | Date |
|-------------------------------------|------------------------------------|-----------|----------|
| <i>Deep Time Walk</i> Conversations | Information sheet and consent form | 2 | 20.03.18 |



Consent to take part in *Deep Time Walk* Conversations

| | Add your initials next to the statements you agree with |
|--|---|
| I confirm that I have read and understand the information sheet dated 20 th March 2018 explaining the above research project and I have had the opportunity to ask questions about the project. | |
| I agree for the data collected from me to be stored and used in relevant future research in an anonymised form. | |
| I understand that relevant sections of the data collected during the study may be looked at by auditors from the University of Leeds or from regulatory authorities where it is relevant to my taking part in this research. I give permission for these individuals to have access to my records. | |
| I agree to take part in the above research project and will inform the lead researcher should my contact details change during the project and, if necessary, afterwards. | |

| | |
|-------------------------|-----------------|
| Name of participant | |
| Participant's signature | |
| Date | |
| Name of lead researcher | Clare Martynski |
| Signature | |
| Date* | |

*To be signed and dated in the presence of the participant.

Once this has been signed by all parties the participant should receive a copy of the signed and dated participant consent form, the information sheet and any other written information provided to the participants. A copy of the signed and dated consent form should be kept with the project's main documents which must be kept in a secure location.

| <i>Project title</i> | <i>Document type</i> | <i>Version #</i> | <i>Date</i> |
|-------------------------------------|------------------------------------|------------------|-------------|
| <i>Deep Time Walk Conversations</i> | Information sheet and consent form | 2 | 20.03.18 |

Appendix C Participant information sheet for *Time and Tide Bell*

School of Performance and Cultural Industries



Information sheet for *Time and Tide Bell* conversations

Before you decide whether to take part in this research project, it is important for you to understand why the research is being done and what it will involve. Please read through the following information and discuss it with others if you wish. Ask me if there is anything that is not clear or if you would like more information.

This research is being carried out as part of my PhD at the University of Leeds, exploring experiences with interactive art. I am requesting your involvement in this research to discuss your experience with the *Time and Tide Bell*.

Following your encounter with the work, you will be invited into an informal conversation with me that will last no longer than one hour. After four weeks, you will be invited to participate in an additional conversation with me, on the telephone or in person. An invitation for a further conversation will be made a further five months after that.

Our conversations will be audio recorded. Recordings will only be used for my own research analysis and for illustration in conference presentations and lectures. Any material used from these conversations will be anonymised, unless you formally state that you would prefer to be identified. No other use will be made of them without your written permission. No one outside the project will be allowed access to the original recordings.

Participation is entirely voluntary. If you do decide to take part you can still withdraw at any time. You do not have to give a reason.

For further information, please contact me at pccm@leeds.ac.uk or my PhD supervisor, Fiona Bannon, at f.bannon@leeds.ac.uk

| <i>Project title</i> | <i>Document type</i> | <i>Version #</i> | <i>Date</i> |
|---|------------------------------------|------------------|-------------|
| <i>Time and Tide Bell</i> Conversations | Information sheet and consent form | 1 | 11.03.19 |



Consent to take part in *Time and Tide Bell* Conversations

| | Add your initials next to the statements you agree with |
|--|---|
| I confirm that I have read and understand the information sheet dated 11 th March 2019 explaining the above research project and I have had the opportunity to ask questions about the project. | |
| I agree for the data collected from me to be stored and used in relevant future research in an anonymised form. | |
| I understand that relevant sections of the data collected during the study may be looked at by auditors from the University of Leeds or from regulatory authorities where it is relevant to my taking part in this research. I give permission for these individuals to have access to my records. | |
| I agree to take part in the above research project and will inform the lead researcher should my contact details change during the project and, if necessary, afterwards. | |

| | |
|-------------------------|-----------------|
| Name of participant | |
| Participant's signature | |
| Date | |
| Name of lead researcher | Clare Martynski |
| Signature | |
| Date* | |

*To be signed and dated in the presence of the participant.

Once this has been signed by all parties the participant should receive a copy of the signed and dated participant consent form, the information sheet and any other written information provided to the participants. A copy of the signed and dated consent form should be kept with the project's main documents which must be kept in a secure location.

| <i>Project title</i> | <i>Document type</i> | <i>Version #</i> | <i>Date</i> |
|---|------------------------------------|------------------|-------------|
| <i>Time and Tide Bell Conversations</i> | Information sheet and consent form | 1 | 11.03.19 |