Abstract
Drawing from our collaboration on an AHRC funded research project, this essay will look at the production and reception of an artwork and offer an account of the tension in the work between the “authored” time line, the user’s temporal experience and the impact of mediated time on that experience. The artwork itself utilises a combination of pre-recorded audio, geo-locative technology and printed material to create an urban walking experience. The route is not pre-determined, but is created uniquely each time by a participating audience member in response to thematic and reflective provocations. Locations they are invited to choose while walking become part of their internal memory map of the city, while the GPS co-ordinates are stored by a mobile device. In the second half of the experience, the walker retraces their steps, layering their own experiential memory within media triggered by the stored locations. The audio and written material in the piece was collected from regions around the world at risk of disappearing. These include emptying Latvian villages, the sinking wetlands of Louisiana and the rising edge of the Tunisian Sahara. A particular affect of critical awareness of planetary presence is produced as an event at the interface of the spatial and temporal elements that compose it.

Keywords
Audio, Ambient, Time, Composition, Locative

Introduction
“When you do pause for a moment, you’re lifted off to a desert settlement or the bayou, you’re jaunting in and out of the space all the time” (audience comment).
This article argues for the importance of accounting for the different timescales produced in the mediated city, and offers an account of practice-led research that addresses questions surrounding the affordances of mixed reality artworks with an emphasis on temporality. Specifically, it offers an account of how an “anthropocenic affect” is produced through the design and management of time within a locative framework. The article observes the tension within fieldwork between the “authored” time line, the user’s temporal experience of the work, and the impact of mediated time on that experience. This work arises from a research collaboration which investigates situated reading and listening experiences as mediated through pervasive computing technologies. It discusses the production and reception of an audio walk and reading experience commissioned by a research council project. Above all, the aim of this article is to complement spatial analysis by introducing an analysis of the ways in which experiences of time can be productively and critically dislocated.

We argue that the forms of composition deployed in this work offer the opportunity for original ways to understand our experience of the Anthropocene. Rather than producing an encounter with the “eco sublime” (e.g. awesome chunks of iceberg crashing to the ocean), this work instead enacts, through its formal properties, a subjective experience of different timescales. We argue that this position could not be arrived at through theoretical analysis alone. An experimental practice-based process of manipulating time produces the argument that we can understand climate change through an experiential approach that affords the opportunity to enact modes of attention necessary to embracing ecological complexity.

The questions the work set out to investigate were:

*How might artists compose temporal structures for geospatial work?*

*How can the manipulation of time in geospatial practices constitute an eco-critical experience?*

**Description of the work**

*It Must Have Been Dark by Then* (Speakman, 2017) offers users the opportunity to shift between worlds through listening to audio, music and narration collected from three globally distant locations already living through the effects of climate change. It is an audio walk where the users choose the route, creating a map of change. It brings
stories and sounds collected on a journey through other places in the world, inviting you to place memories in the streets, finding where your world and those of others intersect. The experience asks the listener to seek out types of locations in their own environment, and once there it offers sounds and stories from remote but related situations. At each location, the listener/reader is invited to tie those memories to the place they are in, creating a map of both where they are right now and of places that may not exist in the future.

Figure 1: The printed book and software application running on a mobile device.

The final form of the work under analysis consists of a printed book, acoustically isolating headphones and a software application for geo-located mobile devices (running iOS or Android operating systems). The software contains a library of pre-recorded spoken word, music composition, field recordings and interviews. These are played back to the audience in response to either timed events, onscreen interactions or the triggers created by the geolocation of the device. The text in the printed book acts as a reflective travel diary, documenting journeys made by the artist. The spoken word heard by the audience contains instructions that guide them through the experience and prompts for conceptual consideration.

The underlying software system is a proprietary platform, whereas the compositional structure of the work is designed by the artist. The system continually monitors the GPS position of the participant; it records specific locations in response to onscreen interaction, and these are then used as geo-located triggers in different stages of the experience.
The text and audio content was created through three field studies across Latvia, eastern and central Tunisia, and southern Louisiana in the United States. On each expedition, a combination of ambient recordings and interviews were conducted. Music compositions were then created by the artist in collaboration with musicians that both used and responded to the field recordings. The narrative text of the work was written by the artist in collaboration with an author and the printed component was a bespoke design for the project. The sites themselves were initially chosen as being representative of changing or disappearing environments, exploring Latvia’s rapidly shrinking population, the sinking wetlands of Louisiana and desertification in Tunisia. As the recorded material was compiled and reflected on through an iterative production process, the notion of disappearance moved us toward thinking of It Must Have Been Dark by Then (IMHBDBT) as a new kind of eco-critical artwork.

At the start of the piece, audience participants are given a book, a phone with the app loaded and a pair of headphones. The poetic narration prompts us to read individual chapters from the book at certain moments, we listen to music, read or listen to narration whilst sometimes walking, sometimes standing still, observing. We are invited to construct a journey where we are asked to locate dwellings, a tree, a rock, water. These sites are captured as markers on a map with no other features, which then generates further destinations for the walker. Each of these generated destinations may involve crossing roads or walls, and in identifying locations that cannot, with safety, be reached, the “walk” becomes a challenging process of navigating the environment. At the outermost point of the journey, the walker is invited to retrace their steps; this time, however, each of the marked locations automatically offers spoken documentary content from the inhabitants of the distant, climate threatened locations that the piece is based around.

**Contextual review**

The form of the work sits within the fields of sonic arts, mobile audio and locative media. This latter term, “locative media,” coined by Karlis Kalnins (Zeffiro, 2012) came to represent a body of work created at the beginning of the 21st century that used geo-located technologies. In Andrea Zeffiro’s genealogy of the term, she usefully rejects the idea that locative media is a single form, arguing instead that “it is a field of cultural production that is perpetually evolving and continuously
reproduced vis-à-vis struggles between technological interpretation and different visions of future use” (Zeffiro, 2012).

A very brief genealogy of the current work begins within the Situationist International (SI) and the dérive, signalling unplanned journeys “through a technique of rapid passage through varied ambiances” (Andreotti and Costa, 1996). The SI’s originary role in locative media is considered often merely a “wilful skimming of the surface of psychogeography taking it to mean an unconstrained movement in the streets, and apparently less of an alignment with the wider project of anti-urbanism” (Pope, 2005). Cornell and Varnelis (2011) have highlighted that until the release of the GPS enabled iPhone in 2008, locative media was “the stuff of demos and art-technology festivals,” suggesting that the “mass realisation of locative media seems to have taken the wind out of its sails as an art form”.

We would argue that the role of audio within the field is of greater relevance to the work. The earlier release of the Walkman by Sony in 1979 opened up a new cultural space that shifted not just consumer or public possibilities for mobile sound, but a range of artistic practice that connects directly to the current work (Thibaud, 2005; Bull, 2007; Tonkiss, 2005). Beginning in the early 1980s, Antenna Theatre, for instance, used Walkmans in participatory theatre work and audio walks, and later Janet Cardiff popularised the form in a fine art context. Teri Rueb’s “trace” (1999) was one of the first works to combine mobile audio with GPS technology, an approach that was continued and developed in the works of Blast Theory, Plan B, Coney, Circumstance et al. Today, new software platforms for creating locative audio experiences (Detour, Motive, Apptrails, etc.) continually appear.

If we position the work under discussion within the field of locative mobile sound art, we can then also describe it using Frauke Behrendt’s taxonomy. It is primarily a work of “placed sounds,” where artists “curate the distribution of sounds in (outdoor) spaces, often – but not exclusively – by using GPS,” but could also be considered a “sound platform,” where “typically the audience are also able to distribute their sounds in space” (Behrendt, 2015). For most audiences, the addition of audio soundtracks to our stream of information and mediation ensures that an
always available everyday mixed reality is already a very common experience for significant parts of the global population. By mixed reality here we refer to the sensory experience of inhabiting embodied and emplaced time, in the kitchen, the car or the street, simultaneously with an extended sense-making horizon defined by whatever pattern of information and mediation processes we are connected to at any given moment. Given these broad techno-cultural contexts, we can examine the actual auditory content and structure of the piece.

**The listening of elsewhere**

Aside from the spoken words that give the participants prompts and instructions on how to progress through the work, the remaining recorded audio consists of abstract sound (the music score) and field recordings. Jean Paul-Thibaud (2005) describes the experience of mobile audio as the listening of elsewhere, that it is a “manager of sensorial channels, it questions the relationship between the dweller and his environment and enables new modes of experiencing the city” (330). Isolating ourselves from the complexity of the sonic world engenders a different decoding of the visual space. When hearing music, or abstract concrete sounds devoid of space, any cochlear interpretation of our surroundings is greatly restricted. Presented to contemporary European audiences, the response is often to compare it to experiences of cinema, in so far as the audio walk “soundtracks” the site of the event, turning it into a mise-en-scène designed for probability (Dovey, 2016).

The music score here draws explicitly on a reference to cinema, becoming a soundtrack of the “present” and the “surrounding,” whereas the use of field recordings from Latvia, Tunisia and New Orleans represents the remote and the distant. When we stand in an urban context in London but hear the acoustic space of a sand dune in Tunisia, a different and complex kind of layering occurs. The field recording brings with it another acoustic space, but one that is different from that being experienced visually by the listener. It is not just the sound of somewhere else that is explicitly presented, but also the recording of someone else, another presence is introduced into the listeners’ perception. Bennett (2003) considers a field recording as being “an inscription tracing the engagement of the primary listener with the soundscape at that time, in that place” (103). It says loudly you were not there, but someone else was.
We associate recordings as being always historical, however when placed within a geo-located work the ability to hear the recordings is predicated on the listener having already been present in a specific location. The “you were not there” of the auditory experience of field recording confronts the “you are here” of the visual and embodied experience. The historical nature of the field recording becomes present through the audience agency of locating it. These temporal and spatial shifts are a tangible experience for the audience, and as such suggest how the work might offer a new eco-critical mode of attention.

This eco-critical mode of time and place suggests how IMHBDBT might be located as an artwork associated with the Anthropocene.

The idea of the Anthropocene is a justifiably contested one, one of the most common critiques being that in its consideration of humankind as a singular entity it subjugates the internal histories of exploitation, dominance and inequality. Despite its discontents it is a term that has permeated contemporary arts practice. Latour (2015) suggests its usefulness as a tool, partly for speeding things up, as, “you don’t have to show again that science and politics are related,” a connecting term that “brings together artists, scientists and philosophers” (49). The Anthropocene Project organised by Haus der Kulturen der Welt in Berlin over 2013/2014 brought together an international wealth of art and science practice under this framework, while the Dark Ecology Project by Sonic Acts (2014-2016) sought to create new works responding from within sites and spaces where the concept visibly and physically manifests itself. As highlighted by Davis and Turpin (2015), the Anthropocene is “primarily a sensorial phenomenon,” and yet our understanding of it is “frequently framed through modes of the visual” (3).

It is within this wider body of anthropocenic reflection that we place IMHBDBT, not as a theoretical critique, but as an embodied experience that offers an internal, lived perspective. In their introduction to The Art of the Anthropocene (2015), Davis & Turpin suggest, “the Anthropocene can be felt as a call to re-imagine the human through biology and geology” (6). Complementing this, Timothy Morton (2007)
advocates for literary and sonic art works that produce heightened awareness of self and environments, arguing that the “self and the world are intertwined” (69). Morton’s ambient poetics, which is developed at length in *Ecology Without Nature* (2007), whilst ambiguous, looks for experiences that produce a heightened awareness of all the entities, human, technological, animal and architectural that constitute our environments. This ambient poetics decentres the human subject in order to produce the conceptual conditions for ecological awareness and action.

Morton’s ambient poetics is at best a contradiction, a property to be valorised but one that may be impossible to achieve. “Ambience,” he asserts, “is what environmental writing is after, and ambience is its ultimate nemesis” (2007: 81). Ambience, from Morton’s perspective, is thus “an untenable concept but pervasive” (2007: 89). He sets up an “ambient rhetoric” in which ambience is understood as unstable and restless, a Janus like dialectical image that looks toward both oppression and liberation but may lapse at any point into a “resting place” that has “abandoned its liberating potential” (Morton, 2007, 142). Where ambience becomes a kind of easy immersive evocation of environment or landscape it loses its generative and critical power.

But Morton repeatedly suggests the potential for a particular kind of ambience to offer a more fruitful eco-critical practice.

Ecological writing wants to undo habitual distinctions between nature and ourselves. It is supposed not just to describe, but also to provide a working model for a dissolving of the difference between subject and object, a dualism seen as the fundamental philosophical reason for human beings’ destruction of the environment. If we could not merely figure out but actually experience the fact that we were embedded in our world, then we would be less likely to destroy it (Morton, 2007: 63-4).

We argue that we will not find the experience of “actually being embedded in the world” in front of a page of text. Experiential artworks that place subjects in the world, in this case using locative media techniques, might be a more useful starting position. Moreover, *IMHBDBT* does not seek the resolution of inside and outside,
figure and ground or page and margin that underpins Morton’s critique of the ambient. It precisely requires the audience to shift between and through those positions, and it is this movement of attention between scales of time and places that produces a new eco-critical awareness of one’s own time and place. In doing so we argue that this work usefully suggests a way of framing events that produce particular modes of attention constituted by a situated awareness of the complex entanglements and timescales of climate change.

Ursula Heise (2013) points out that some eco-criticism can be read as a call for particular ways of reading, a mode of attention to a text, rather than special topics such as landscape or environmental degradation. In the same piece, Heise goes on to argue for an eco-criticism founded in a “thoroughly transdisciplinary field of environmental humanities” that has “place” as a core focus (2013: 642). In another example of the need for different kinds of narrative experience, Donna Haraway (2016) discusses both Ursula La Guin and Bruno Latour as exemplars of the need to tell new kinds of “geostories” through which the forces of climate change and mass extinction can articulate themselves (40). These critical positions all argue for ways of telling and reading new kinds of stories. We want to argue that we might look to sonic art practices to find such ways of experiencing the new kinds of “geostories” produced by the climate crisis.

**Eco-critical sound art**

As we will be concentrating on the way the experienced is shaped and composed through its auditory content it is useful to look at it in the context of the wide-ranging body of sonic arts practice that works critically and aesthetically in dialogue with anthropocenic concepts.

As part of this contextual analysis we propose a working categorisation of the uses of sound in this field as revelatory, responsive and documentary. This allows us to identify the different sonic components of the work in question.

*Revelatory* works are those that seek to sonify aspects of the world that fall outside of our human range of hearing. Artists such as Toshiya Tsunoda tap directly into the
vibrations of objects using contact microphones, whereas others, such as Christina Kubisch, Martin Howse and Shintaro Miyazaki bring the electromagnetic spectrum into the audible range. “Air Pressure Fluctuations” by Felix Hess uses recordings of infrasound vibrations made over five days and nights then accelerates the recording 360 times. The resulting sound is full of whistles, clicks and beeps, but all underscored by a deep drone “formed by oscillations in the atmosphere—micro barons—caused by standing waves on the Atlantic Ocean, far away” (Toop, Detmer et al., 2004: 192). Timothy Morton (2013) suggests that “a gigantic entity has been channelled into a sound recording audible to humans” (56). Jana Winderen (2010) and Max Eastley (2006) have both recorded glacial shifts in the arctic. The clicks and pops captured in the recordings are from air being released within the ice, such that, “what you are hearing is a 10,000-year compressed event being released in just tiny instant” (Buckland, 2006: 53). Ann Kanngieser (2015) has proposed five ways that sound might address the geo-politics of the Anthropocene. Our notion of the revelatory falls within her proposition for imperceptibility producing an awareness “of registers that are unfamiliar, inaccessible and maybe even monstrous, registers that are wholly indifferent to the play of human drama” (Kanngieser, 2015: 2 italics added).

These works raise a central problem for our argument: Are these time compressions inherently audible? Comprehensible even? The articulation of “geodata” without human interpretation and contextualisation is challenging. Without a contextual framing the sounds remain ambiguous, forced to reside in a conceptual materialism that stays inaccessible to human audiences. How might they directly connect to the listener’s present? Whilst such works frequently offer insight into “the monstrous” by the same token, like the anthropocenic itself, they leave no space for the human subject. The terror they produce is precisely the effect of the nightmare in which everything has gone too far and we face imminent extinction in the face of implacable forces.

Responsive works can be considered as those that do not use direct field recordings or captured material, but instead harness emotive, visceral and conceptual qualities of sound to represent and/or express their eco-critical perspective. There is a developing body of work that we identify as musical and sonic work made in dialogue with and in response to the crisis. Reviewing the album “Tar” by Iranian
composer Saivaish Amini, Karl Smith (2017) describes how the layers of noise and sonic detritus makes their impact “not by volume but by an omnipresence impossible to ignore…representative at once of the insatiable perpetual motion of contemporary life, its lasting impact on our environment, and the futility of all that sound and fury on a universal scale”. Richard Skelton’s compositions in “The Inward Circles” are derived from processes that literally dig into extinct plant life and exhumed bodies. The sound is dark, minimal and envelping, rich with mixtures of processed acoustic instrumental texture that defy separation, album titles evoking a world that is bigger and older than we know. It is not eco-elegy, but rather brings “a more feral feeling of being stalked by ecosystemic memory” (Gibb, 2015). Such work has a sense of the overwhelming, of being within something bigger, activated by the pressure of sound waves themselves. It can be heard in the distant screams of Margaret Chardiet as Pharmakon, in the rushing noise of the “World Eater” (2017) album by Blanck Mass, in the dense landscapes of Lawrence English’s “Cruel Optimism” (2017) or the frantic pulsations of J.G. Bieberkopfs’ “Ecologies II” (2017).

The musical score and spoken text elements of the work at hand fall within this domain. They exist as sonic elements that are created through the filter of the author’s experience, and this freedom of authorship allows them to structure the temporality and emotional core of the work.

The field recordings within the work under discussion sit within our final category of documentary sound. Those works that record the already audible, but re-contextualise it temporally and spatially through editing and playback. As the microphone interface transforms the spatial and materialistic qualities of the sound, so editing affects its temporality. “The process begins with the decision to start and stop recording” (Lopez, 1998). These works might be presented in and of themselves as an audio recording, where the listening environment of the audience is anonymised, ignored within the work. Others may utilise the site of listening as an integral part of the work. Chris Watson’s installation “Whispering in the Leaves” (2010) at Kew Gardens brought sounds recorded in the locations the plants and trees came from, activating a sense of audible biodiversity. Voegelin (2014) argues that Watson’s layering of
soundscape “produces not a falsity but an augmentation, an expansion and extension of reality that is not unreal but more dense” (17).

It is important to note that the boundaries between these proposed categories are often blurred and merged by many sonic artists working around ecological themes who process their *documentary* field recordings in such a way that they move towards becoming *responsive*.

Anja Kanngieser (2015) suggests that sound not only connects its listeners, but displaces and changes them. By listening it may be “possible to discern obscured processes,” referencing recordings of increased biodiversity or noise pollution in India (Kanngieser, 2015: 2). The field recordings in the work under consideration are often laced with the sound of infrastructure, no matter where they were recorded. Motorbikes race across sand dunes, oil trucks thunder past as we listen to the last crab farmers living in sinking wetlands. It attempts to address how sound makes “apparent the world is not for humans, the world is rather with humans” (Kanngieser, 2015: 8).

Such works might be understood in the context of Teresa Dillon’s call for a critical sound exploration. Dillon writes:

> The critical sound explorer works primarily with the medium of sound but also has a specific interest in exposing the interrelationships, contextual nuances and situated conditions that give rise to the sound. What this means is that the sound-per-se remains the initial and explicit focus of attention. The secondary elements which emerge through the exploration relate to wider socio-cultural, political or economic meanings, which in some cases become as important as the sound (Dillon, forthcoming 2018).

**Production reflection 1: Layering of timescales**
Our work was produced in order to explore specifically how experiences of time can be managed for users. It is part of a wider investigation into composition and temporality for mixed reality audio-based artworks.

The use of remote sound recordings creates a level of temporal complexity. There is a shared singular timeframe during sections of the piece where the participant walks while listening to a musical score. While the recorded music was clearly made at a previous time and in a different place, it uses only instruments and abstract sounds which for the listener are unconnected to any other sequence of events. Helped using isolating headphones, it becomes the sound of their immediate surroundings, what happens around the participant often appears to synchronise with the music in moments of serendipity. If it can be said that “listening operates on the razor edge between the not yet here and the already gone” (Bennett, 2003), then external timeframes are introduced through explicit textual and acoustic cues in moments where the participant is reading while listening to field recordings.

Chapter Five of the printed text references a series of events taking place at different times over two days, in which the soundtrack of field recordings follows the same sequence. The listening experience for the participant becomes untethered from their immediate surroundings. Previously, temporal references for the music were created by the immediate environment, whereas now the concrete nature of the sounds and events described offers an experience of edited and compressed time. If we are considering the direct experience of the participant within the work as part of its temporal structure, it is necessary to consider this described time as parallel to their experienced time. Although it is a recounted narrative common to literary form and documentary film, here the use works differently, as it contributes to the effect of a parallel present. The listener/reader is called upon to shift their frame of attention from “music accompanying me right here right now” to “words on a page from a travel journal accompanied by atmospheric field recordings from a very distant place” – words that are, however, still delivered in his/her immediate present. The shifting frame of attention destabilises the immediacy of the present that the walker experiences.
In addition to these edited, event-based timelines it is important to consider the time presented in the thematic of the work. The effects of the climate change scenarios it presents are the result of expansive timelines, and while both immediate and prescient, they stretch far beyond human lifespans. The shifting of attentional framings demanded by the narrative structure of the work invites reflection on how these longform temporal events effect not only the remote locations, but also the participant’s locale, attempting to create a temporal perspective on their experience that reaches beyond the framing arc of the composition.

Ada Smailbegovic specifically calls the Anthropocene a way of framing time, and that if we are to understand it, and to feel its temporality as more than just an abstract theory, then we require “a careful attunement to the variegated kind of change” (Smailbegovic, 2015: 97) that composes it. Smailbegovic identifies that our human Umwelt understands only a restricted range of rhythms, and that many of the timescales of the Anthropocene exist outside of these. From the hydraulic slowness of starfish migration to decaying nuclear fuel waste that must be managed far beyond our individual lifespans, this refers to what Morton (2013) would describe as “hyperobjects,” things of massive scale beyond our temporal experience. It is this idea that the we will argue the work seeks to embody through its layered timescales, and, as we shall see below, its untethered spatiality. The technique of layering time in this way suggests an ontology that focuses on different timescales within the moment of encounter with the artwork.

Production reflection 2: Composing flexible temporalities

Due to its open nature, a pre-emptive visualisation of the timeline of the experience becomes impossible. The artist never knows how long participants will walk for, or how long they may pause in particular locations or how long it may take them to find the next point on their phone screen, yet all these events are scored. What remains is a structural sequencing akin to the graphic scores of an indeterminate composition by Morton Feldman, John Cage or Edgar Varese, where duration is left open to the performer. Viewing this form of score allows us to see shape but not specified duration of the entire piece (Figure 2). These sections of flux are interspersed with composed sections of fixed duration.
Figure 2: Extract from structural score, showing FIXED (yellow) time periods whose length is determined by audio files, and OPEN sections where participant controls time either walking (in blue) or reading (in green)

Alongside the field recordings, these sections of fixed duration make up two kinds of compositional arc that are used within the piece.

**Scripted journeys (across page)**

These sections use an edited sequence of field recordings to give an audio narrative to the fluid duration of reading. The documentary sound elements such as rainfall, or a prayer call, or shifts in ambience from the street to a café, are matched by descriptions on the page. As the reader becomes aware of their position in the textual timeline being ahead or behind that of the audio, their temporal control of the text is pushed and pulled by the sound. "I became conscious when I was out of sync with it" (audience comment).

**Known journeys (time and space)**

In these sections, the participant is invited to walk for a fixed duration, though they are not informed of the duration in advance. This uncertainty allows for a composition of recorded voice and music that uses repetition, shifting dynamics, tension and release to give the participants’ journey a musical arc with a sense of progression.
“It was setting the rhythm of my walking, it felt propulsive, it gave me a sense of purpose to my walking” (audience comment). It thus entails a period of attentiveness whose temporal structure is entirely framed by responsive sound.

Production reflection 3: Mapping and discovering

Although the piece depends on GIS, and, specifically the GPS capability of mobile phones, it actually draws from an aesthetic of spatial ambiguity. Ambiguity is not a mode of experience that one might normally associate or want from computing experiences. Clearly, computers present as rational machines, subject to the laws of maths and physics, and, in truth, we may not want an ambiguous experience when we fire up our email systems or spreadsheets in the morning. However, ambiguity plays a key role in the production of art works. The use of ambiguity in interface design has already been developed as a unique strand of HCI by one of the leading UK experts in mixed reality. For instance, in “Ambiguity as a Resource for Design,” methods are elaborated for producing the effects of ambiguity in order to:

…be intriguing, mysterious, and delightful. By impelling people to interpret situations for themselves, it encourages them to start grappling conceptually with systems and their contexts, and thus to establish deeper and more personal relations with the meanings offered by those systems (Gaver, Beaver and Benford, 2003).

The digital map presented to the participant on the screen of the device has no standard geographic markings, it rather displays a set of specific geo-located points, a representation of the relative distances between them. Each one of these points corresponds to a set of co-ordinates in the physical environment. Where this work differs in regard to many locative mobile audio works is in the methods the location of these “sites” are generated.

The first method is based upon the decision of the participant. Having been given a prompt to seek out a “type” of location, e.g. a residential building or some water, they confirm their choice using the software interface and this location of the “site” is stored. Through this process the audience engages in an analysis of their surroundings, sometimes drawing on their own memories or knowledge of a
location, sometimes exploring routes unknown to them and making decisions based on visual or tactile evidence.

“Does this junction suit my idea of what a junction should be...I had these preconceived notions of where I thought I should go, but the landscape ended up giving me the answer” (audience comment).

At other moments, a site is generated automatically at the current geo-location of the participant, and the audio instruction asks them to stop where they are. These sites are generated based on elapsed time from narrative or musical events in the soundtrack. Distance between points becomes shaped by duration. This method creates a shift for the participant from movement to stasis, and in turn forms an awareness of where they are “going” to where they “are.”

These sites are then used as geo-triggers later in the piece, so that when the participant returns to them audio is automatically triggered.

A third method is also used wherein the software automatically positions a site, its location extrapolated from the participants’ journey so far. For example, at one point a site is created 70m away from the participants’ current position at a bearing 45 degrees from the trajectory between the last two points they selected (Figure 3). The generated position of this site does not take into account the physical properties of the environment, and may as likely be inside a building or in the middle of a river. In these moments, the participants’ route becomes bounded by the material, social and legal barriers that exist in the place they choose they experience the work. The “idealised composite of Google Earth” (Burrington, 2017) is brought into sharp focus when a participant is unable to access digital content because of an actual wall.
Figure 3: Software method for choosing geolocations based on participant’s route.

The map of sites describes a singular route of walkable distance for the participant in their immediate location, but simultaneously it becomes a map of an imagined and impossible geography. Each stored site becomes not just a marker in that place, but the field recordings played at that location make it representative of a remote location. In the narrative, a 3,000-kilometer international journey becomes a 100-meter localised walk, but there is no direct mapping of the global onto the local, as each journey is transposed differently by each participant. To put it another way, the mapping of each site resonates through its materiality, not in accordance with a scaled distance.

As we have identified, the layered timescales of the work already are suggestive of Morton’s anthropocenic hyperobject, and if, in addition to this, we consider the locative qualities of the work, a more isomorphic relationship reveals itself. As well as the temporal scale being an identifying feature of hyperobjects, Morton also proposes that hyperobjects are non-localised and distributed. There is no observable site where global warming is to be found; rather, it is phased, meaning that we come into contact with it through specific events such as hurricanes or floods, that it exists on different dimensions temporally and spatially. Can we not then say that the digital content within this work also exists in a dimension other than the one the participant walks through? For instance, when they place a marker and access the relevant layer
of audio content, or when they return to it, they come into contact with the sounds of another place, another timescale. Moreover, in between these moments where the participant comes into phase with the audio layers, we argue that those elements of the work do not cease to exist, but are rather on a different scale to that which the participant can physically experience.

The process through which the walker determines their own route, with their own sites of memory and association, produces not the intended certainty of navigational mapping, but uncertainty, ambiguity and a sense of discovery that in turn produces a strongly individuated experience. In addition, the disregard for relative scale or positioning transmutes the complexity and multiplicity of the other in the climate change crisis into a process for reflecting on the singular present.

**Sculpting ephemerality**

The structural imperative of the work was inspired by the method of loci proposed by Cicero in *De Oratore* (Yates, 1966). This mnemonic device involves the subject associating items that they wish to remember with discrete loci in a spatial environment they have memorised, such as a building or street. Recollection of items is then aided by visualising a journey through this environment.

The aim was to create a work that documented loss and change around the world by tasking the participant with memorialising stories using a physical version of the above technique described. This was achieved through the participants locating each story on different sites that they choose and then physically visit. What actually occurs over the arc of the piece is a much more entangled merging of site and memory.

In the process of choosing locations and listening to resonant material, the participant is only prompted to remember the physical site so they can return to it later. Though there is no explicit link made in the instructions between the present location and the remote field recordings and text, the presence of the participant is not isolated from any physiological impact of the site or their attempt to commit to memory for route finding. In the second half of the piece, the participant is invited
to retrace their steps, walking back through all the sites that were stored by the software.

“As I was going through each point I was aware of committing it to memory, making sure I knew where landmarks were, when I got to the end I was trying to do a mental journey back, but I couldn’t do it, I couldn’t picture it, that part of my memory wasn’t vivid enough I guess. But as soon as I started walking it’s like you’ve got this sort of bodily memory that just knows where to go” (audience comment).

As they pass the stored sites, the software triggers new audio recordings that often contain interviews with people that had been described in the written text but were previously unheard by the participant. At this stage, a complex layering begins to occur. They simultaneously experience, to varying degrees, a memory of their own presence at each site from a visual and tactile perspective, but sonically they are hearing things that relate to what they “read” at each location. The sound becomes a trigger not for a memory of the previous soundtrack or reading from that place, but for mental images or concepts that they experienced while reading in each location.

When the participant reaches the end of the experience, the stored location data is deleted from the software and they are explicitly notified of this. At this moment, the work shifts into an ephemeral state of existence. The printed material remains but their personal map of locations that connected the remote to the local, and all the related content within it, becomes held only within the memory of that participant.

**Conclusion**

This work began with a set of technical considerations around the creative handling of time in geospatial art walks together with a concern to address the theme of disappearing places. Whilst the work was produced within a research context, it was more of a commission than a practice-led piece of research in its own right. In other words, it began with a hunch akin to Robert McFarlane’s (2016) suggestion that “old forms of representation are experiencing drastic new pressures and being tasked with daunting new responsibilities.”
Haraway’s call (2016: 40) for new kinds of “geostories” looks for post-human stories founded on the relationships between species, geology and chemistry. Whatever else such “geostories” might be, we can be sure that the “daunting new responsibilities” they must bear include producing particular experiences of interconnectedness. An eco-critical, anthropocenic art form calls on us to attend to the complexity of the systems we inhabit and influence. It can be expected to produce tangled tales of rocks, microbes and petro chemicals, of bleached coral survivors, algae blooms and spider extinctions, and of power and resistance.

What’s been at stake for us in this discussion is the nature of the attention brought to bear by the work. We must “attend to” the complexity of our systemic ontologies. This necessitates a different mode of attending to the world from the traditional subject/object point of view. As Latour argues (2015), Gaia affords no single vantage point, and, as a result, we have been monstrously tricked by the comforting singularity of the point of view produced by NASA’s image of our warm blue planet floating in the void. There is no overview for this moment in history, our Anthropocene subjectivities are formed in flights over and through the complex systems that produce us.

This work begins by asking the audience participant to be present in his or her moment, to attend closely to the banal surroundings of the everyday city, to look afresh. It then requires the discovery of particular sites, which in turn produces a kind of loosely framed agency. Each participant transposes the material into their own very particular experience. Stories from the climate crisis are then introduced and layered into the participant’s present. These elements are framed and contained by a musical score that provides some more formal aesthetic framing of the experience in terms of rhythm and atmosphere.

In all this walking, reading, attending, listening, marking and locating, the audience participant is shifting through different frames of attention; from right here and now (the smoothness of the bark of this tree that I now touch with my hand) to a forest in Latvia or a bitter plant in Tunisia. The walking, discovery and agency of the interaction design of the piece produces a powerful sense of the present. Of being
present. Yet at the same time the layering and compositional techniques produce a constantly shifting frame of attention between the scales of the very local to the very global, from the instant of the present moment to the time of the sands’ encroachment on a Tunisian village. At one point in the journey the narration asks us to imagine the place we are in without people, in a future where there are only plants, animals and broken windowed emptiness on islands of rising water. The scales of time and space that so often make it difficult to understand climate change are bought into sudden and startling focus.

It is precisely the tracing of these multi scalar modes of attention that produces what we might argue is a particular form of anthropocenic affect. If the geostory is one of entanglement of scale, from microbial to hyperobject (Morton, 2013), and from the immediate present to geological time, then to tell it, to understand it, we need to develop forms of attention that afford us the potential to trace networks of entanglements. This mode of attention is not the curiously static subject/object contemplation produced by encountering the scale of ecological disaster, but rather it is an agility to trace the inter connectedness of multi-scalar agents and entities.

**References**

The Ambient Literature Project [https://ambientlit.com/](https://ambientlit.com/)


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Duncan Speakman was originally trained as a sound engineer at the Liverpool Institute for Performing Arts. He moved to Bristol in 1999 where he began developing interactive documentary projects and installations. Since 2005 he has focused on mobile audio and locative media, developing work where the line between audience and performer becomes continually questioned, creating socially relevant experiences that engage audiences emotionally and physically in uncontrolled spaces. These experiences take many forms, from mass participation performances and intimate in-ear stories, to books, installations and workshops. Within narratives of experience, he wraps his questions in melancholy and romance. His work is regularly presented internationally and recent exhibitions include Times Museum (Guangzhou), Saitama Triennial (Tokyo), Microwave (HK), IDFA (Amsterdam), Mayfest (Bristol), Z33 (Hasselt) TPAM (Tokyo), Kontraste (Krems), SonicActs (Amsterdam), Playpublik (Berlin), MOCA (Taipei), Vooruit (Gent), MediaCity (Seoul) and ArteMov (Sao Paulo), Barbican (London), FutureEverything (Manchester), Edinburgh Film Festival, and Soho Theatre (London).

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