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Wayback Sound Machine: Sound Through Time, Space, and Place

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Dedicated to…

My daughter, Odette, whose joy

and wonder has been with me

every step of this journey.

And Ethelyn Carol Colbert,

whose joy and wonder

is deeply missed.

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Abstract

What can we gather from sounding the past? This interdisciplinary art studies project will research various forms of sound from the past, and designing sound for the past, to consider what knowledge and applications can be gained from the concept, particularly within a culture and cultural history in which the visual is predominant within a segregated sensory hierarchy in mediating our perception of the world around us. Within that, this thesis proposes that the relationship between our soundscape and creative sound design can give us key information about how we listen, what we listen for, and what that can tell us. This thesis will show that this information holds benefits and contributions towards many disciplines-including art and cinema, archive studies, ethnography, and ecology-which will be investigated in-depth through practice-based research, case studies, philosophical inquiry, and a new path in sound studies connecting soundscape ecology, sound ethnography, sound art and design, and aural culture.

KEYWORDS: Artistic Studies, Sound Studies, Film Sound Studies, Sound Ethnography, Soundscape Ecology, Ecophilosophy, Acoustic Ecology, Sound Archives, Memory Studies, Sound Design, Aurality, Aural Culture.

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Chapter I: Introduction

What can we gather from sounding the past, and within that, what is the relationship between soundscape and sound design?

What can we gather from sounding the past? This thesis project will research various forms of sound from the past, and designing sound for the past, to consider what knowledge and applications can be gained from the concept, particularly within a culture and cultural history in which the visual is predominant within a segregated sensory hierarchy in mediating our perception of the world around us. Part of my inspiration towards a research project on this subject has to do with discovering and gathering other research based on the subject of sounding the past in various disciplines, as well as art projects investigating these themes, while initially working with this concept and question in my own practice. The drive to discover, gather, compile, and investigate these works together, along with my own, gave rise to the desire to also consider the themes and thematic questions through an interdisciplinary thread that weaves–not always linearly, not always historically–but with connectivity though soundscape ecology, sound ethnography, sound art and design, and aural culture. In Chapter 2, 3 and 4, after the introductory chapter, I will write about the thesis project case studies; including projects of my own, and sound design for other filmmaker and artists' works using the thesis' concepts and methodologies, demonstrating that this information and knowledge holds benefits and contributions towards many disciplines including art and cinema, archive studies, ethnography, and ecology. The project proposes; as artist and writer Salomé Voegelin (2010) states in her own Introduction to *Listening to Noise and Silence, Towards a Philosophy of Sound Art*, "…no real conclusions but only strategies for engagement and efforts of interpretation". (p. xiii) I do, however, propose individual and comparative case-study conclusions, in which I use these strategies as a tool for conceiving, organizing, composing, and designing sound from and for the past.

The *Wayback Sound Machine* thesis investigates various theories of audition and perception of sound in time and place and proposes an interdisciplinary connective aurality between the perception of sound in time and place with soundscape and sound design. Further into this chapter the project will apply Visual Culture methodologies towards an Aural Culture and makes a case for critical listening and aurality towards sound design, especially when using sound from the past (archives) and designing sound for the past (representation). Voegelin (2010) suggests a "sonic sensibility would illuminate the unseen aspects of visuality, augmenting rather than opposing visual philosophy". (p. xiii) The thesis ties the way we listen to our soundscapes to the way we design and listen to cinematic sound. When I use the term, "cinematic", I am including expanded cinema, time-based media in installation and performance, and sound art that relates to or suggests motion pictures and their characteristics, mechanical and cultural. The project ties together and extends theories such as Bernie Krause's *Acoustic Niche Hypothesis*, or *Biophony,*[1] (Krause, 2012) and Nobuo Suga's *IBE*s (Information Bearing Elements), (Suga, 1992) to illustrate how complex perceiving bodies are in the process of information gathering from their environment; and how aesthetic listening derived from listening for survival, which is important when we consider our contemporary listening practices and the many elements that shape them–listening is subjective. "A sonic sensibility makes thinkable complex connections and trajectories in time and space." (Voegelin, 2010, p. xvi)

What is a *Wayback Machine*: [2] a virtual tool for collection, preservation, and presentation of time and space, and so it follows that a *Wayback Sound Machine* will perform this sonically. A machine is also an assemblage of parts that transmits forces,

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[1] Once called the Acoustic Niche Hypothesis, which was an early theory of the term *biophony.*

[2] Original use of Wayback Machine described a continuous digital archive system of the entire World Wide Web, allowing users to go back to early versions of websites and the web of the past with access to defunct websites. "The name *Wayback Machine* was chosen as a reference to the "WABAC machine" (pronounced *way-back*), a time-traveling device used by the characters Mr. Peabody and Sherman in *The Rocky and Bullwinkle Show*, an animated cartoon. In one of the animated cartoon's component segments, *Peabody's Improbable History*, the characters routinely used the machine to witness, participate in, and, more often than not, alter famous events in history." Retrieved September 28, 2016: https://en.wikipedia.org/wiki/Wayback_Machine

The Wayback Machine can be accessed through the Internet Archive here: https://archive.org/web/

motion, and energy. Sound does this, as it performs its process, moving through space and time in a manner predetermined; yet remarkably not understood as a whole. A machine is defined as a device that mechanically, electrically, or electronically operates a task. This is also fitting to describing sound and our mechanism for hearing, and the interaction of the two. A machine is also described biologically towards its functioning systems and their production, or combination acting together towards a common task. This is also applicable to define a combination of people and their agencies, towards a common end.[3] Or in literature, or on a stage, a device introduced for dramatic effect–sound design can be considered here as well, approaching closer to what I would like to discuss.

Upon entering our ears, sound signals travel first to the oldest, pre-reflective areas of our brain, in constant process.[4] Rather than the lines and paths and bordered sections most drawings would illustrate, in reality those paths and processes are still mysterious, and the complicated mess of neurons and neural substrates would look more like a Jackson Pollock painting.[5] From the Auditory Thalamus, two paths form: a high speed and unconscious path towards the Amygdala, then Hippocampus; and a slower, more conscious path through the Auditory Cortex then Hypothalamus. Blesser and Salter connect this to the way we tend to think of ourselves as two selves; the experiencing self (our now: our implicit memory), and the remembering self (thinking then now: our explicit memory). (Blesser and Salter, 2018) Rather than the immediate blending of perceived information, such as with vision, most information in sound (such as location and loudness) is kept and processed separately along these routes, allowing the infinitely complex activity of hearing to collect instantaneously a large amount of data, and simultaneously choose and process a selection of that information towards affect, sensation, and thought, in application and collaboration with our other

[3] *Machine* as defined online by Merriam-Webster: agency: 2. b (1): a combination of persons acting together for a common end along with the agencies they use. Retrieved June 23, 2017: https://www.merriam-webster.com/dictionary/machine

[4] Recent studies are showing more and more that much of audio processing takes place prior to reaching the auditory cortex. This article was retrieved from 2012 using the Wayback Machine. Retrieved November 13, 2017: https://web.archive.org/web/20120415125830/http://www.soc.northwestern.edu/brainvolts/documents/Strait_NYAnnals.pdf

[5] This is precisely how Dr. Barry Blesser, co-author with Dr. Linda-Ruth Salter of *Spaces Speak, Are You Listening?*, described the process in his talk at the Sound Forms Symposium in Copenhagen, October 2018, showing us a projected slide of Pollock *Number 1, 1949*

senses.[6] Modes and methodologies that take this into consideration can be applied when designing sound in creative practice, in particular work that considers sound with visuals, which can allow us to enter deeper and outside borders and frames, and play a crucial role in transmitting an experience from most time-based media, in a partial mimicry of how we experience our aural environment in relation to vision; we cannot see what is behind us, but we can hear it. We can apply that to what we see in front of us, and we have almost the full picture.

Audition has a special relationship to emotion, instinct, and memory, both individual and collective. While hearing, if not hearing-impaired, is usually defined as an automatic system of perceiving sounds, listening is a conscious act giving attention towards those sounds. Tapping into that ancient area of our brain, listening provides immediate information telling us where we are, if it is safe, and how we should feel about that. “Based on hearing, listening (from an anthropological point of view) is the very sense of space and of time," Roland Barthes wrote in his 1985 essay, *Listening.* (p. 247) Barthes further notes, "[N]oises have been the immediate raw materials of a divination, (cledonomancy): to listen is, in an institutional manner, to try to find out what is happening”. (p. 247) Or perhaps, what has happened. Or even, what will happen. We have evolved to not trust newness; we need to learn through exposure and experience, which artists can help us with. (Blesser & Salter, 2018) Artists and sound designers[7] working with and considering sound from the past can create sonic compositions and databases that could help us to remember and think about our heritage, to feel our heritage. A fluid museum and living archive to give voice to the past in the present, while creating new experience and highlighting information within the complexity of our changing soundscapes, over a period that usually defies our comprehension. This thesis seeks to explore and produce critical engagement with listening and sonic recording, compilation, preservation, and (re)presentation through sound design. To gather, bringing together and assembling, taking in the scattered

[6] A simple article to help explain this complexity can be found here, retrieved November 13, 2017: http://www.brainfacts.org/sensing-thinking-behaving/senses-and-perception/articles/2012/hearing

[7] The title of “sound designer” was first given to Walter Murch for his sound work on the film *The Rain People* (1969), from director Francis Ford Coppola. Coppola and Murch described the term as, "an individual ultimately responsible for all aspects of a film's audio track, from the dialogue and sound effects recording to the re-recording (mix) of the final track." Ondaatje, Michael; Murch, Walter (2003). *The conversations: Walter Murch and the art of editing film*. London: Bloomsbury. p. 53.

fragments from here and there, from now and then, from collections and contributions, to "take up from a resting place", and keep from "gathering dust", to affect the various collections of, to at times summon, to at times regain agency.[8] Gather can refer to collecting sounds, to the archives, to using archives, to receptions of knowledge. A "critical engagement that witnesses, documents, and narrates, (…) an aid to develop what is being practiced and how it is being listened to", and here, with a specific regard to the past. (Voegelin, 2010, p. xiii) But…**What can we gather from sounding the past, and within that, what is the relationship between soundscape and sound design?**

For three packed days in October 2018, multiple sound scholars and practitioners from around the world met in Copenhagen for the Sound Forms Experiential Symposium on sound, through the Sounding Bodies Research Project,[9] supported by the University of Copenhagen, Kunsthal Charlottenborg, and the Royal Danish Academy of Fine Art. In an opening presentation, Dr. Holger Schulze of the Sound Studies Lab of the University of Copenhagen, and scholar of cultural history of the senses, began his talk with stating that, "The project of studying sound is unfinished, it's only halfway through at best." (Schulze, 2018) He presented three streams of historical timelines to sound studies: Art, as the oldest discipline exploring sound, Natural and Engineering Sciences, and Cultural Theory and History, the newest. Natural Sciences seeks to understand the nervous system, but tends to understand it as an isolated activity due to the nature and design of the experiments, constricted by the Lord Kelvin derived idea that if you can't measure it, then you can't know it, therefore it's not science.[10] He feels cultural Sound Studies can create logocentrism and anti-corporealism when trying to be objective, rather than considering the different and subjective complexities to different and subjective listening bodies, and tends towards the generalized. (Schulze, 2018) Art approaches

[8] Definitions of *gather* were gathered from the Merriam-Webster.

[9] Professor Jenny Graf had developed and invited me to be a researcher and presenter in this group early in its formation, where I was able to present and discuss much of this research in its development, for which I am indebted. More on this project can be found at: https://soundingbodies.kunstakademiet.dk/

[10] "Not everything that can be counted counts. Not everything that counts can be counted" William Bruce Cameron, 1963 text "Informal Sociology: A Casual Introduction to Sociological Thinking" (though often attributed to Einstein).

have focus towards and explore what listening could be, and the ear is conceptualized in artistic practices. Here I slightly disagree, while there is a history of this focus, you also have many practitioners who explore the concept of listening in modes outside of and besides the ear, recordists using tools and methods that allow listening outside the human ear's range, and artists who explore listening as a full body and mind practice with art, such as Pauline Oliveros, whose work with *Deep Listening* (2005) had the goal of expanded consciousness and healing through listening connected to the body, at times as a full body act, as with some of her *Sonic Meditations*, (1974) which will be written about in a further chapter.

But yes, Sound Studies is in a perpetual state of becoming, and within that continuously re-defining. As quickly as its proclaimers proclaim new theories, threads, and branches, they are cut down. While this is important critically, the speed in which it is happening has not been so conducive for a solid foundational vocabulary to form. Added to that, sound studies being trans-disciplinary from its beginning, often holds a shared term with different definitions. But before we explore those terms and definitions, for this path of research, I want to initially talk about what I mean when I talk about time, as questioning assumptions and questions of time and timelines will be an important part of this thesis.

I.1. What past? A triangle of sonic time

When we look up at the night sky, perhaps somewhere distant enough from the bleed of urban glow, we witness a living archive of light splayed out before us. A projection of the past Universe, not the one shared within our actual present in which we are witnessing it, but the receiving end of the rippling event of the image's original emission. Stars long dead and cold, stars exploded or imploded, stars of different colors in their stages of mortality–the image we are watching has already happened and has already changed drastically. That original moment we think we are witnessing has moved on, and even further from us as the Universe expands away, like Benjamin's Angel of History, looking back in despair as it continues into the future. We cannot help the future unless we address the past, we cannot address the

past unless we cease to think of it as an inaccessible object or artifact frozen in a progression of time. [11] (Benjamin, p. IX).

It is an image of the past that fuels us with the desire to create narratives of gods and angels, the power to shrink us down to nothing and make us question existence itself, that allows us to project our own humanity upon it. An image from the past, now no longer. But living and present in our own experience of it, that is how we perceive and feel it, that power and that narrative coming from within us in conjunction with our aural present surrounding us at the moment of experience, our soundscape. If we combine that with the knowledge that it was once, is no longer, we have a powerful event. This is a living archive, a rupture in how we think we experience a process or progress of events. And as we travel further into it with both our imaginations and technology, we are even beginning to have the ability to hear it, and for it to be heard. [12] And looking at the already gone light of stars is like experiencing time in sound, already a trace of what was emitting, with the capture of the present, and expansion towards the future. Listening to a moment like this, how do we think about its time?

I.1.a. PERCEPTION: time and place of sound

Henri Bergson described, the "moment when the recollection (…) is capable of blending so well with present the perception that we cannot say where perception ends or memory begins." (Bergson, 1911, p. 106) Sound perception is multi-tiered. "In the same mental phenomenon in which the sound is present to our minds, we simultaneously apprehend the mental phenomenon itself." (Brentano, 1874, p. 179) Philosophies of sound can be useful in considering time. While most philosophies focused on perception mostly privilege the visible (as we cognitively often privilege the visible), thoughts towards sound perception, and further sound

[11] "Where *we* see the appearance of a chain of events, *he* sees one single catastrophe, which unceasingly piles rubble on top of rubble and hurls it before his feet [...] That which we call progress, is *this* storm." (Benjamin, p. IX)

[12] The sonification of the stars through NASA's Kepler project, a building, living archive: http://kepler.nasa.gov/multimedia/Audio/sonification/

with vision perception, reveal the complexity of the temporal nature to sound, and its relationship to space and place. “What is more, we apprehend it in accordance with its dual nature insofar as it has the sound as content within it, and insofar as it has itself as content at the same time.” (Brentano, 1874, p. 180)

But what are we apprehending? Are they objects? Are they emissions? Are they properties of objects, or events? If we know what they are, then where are they? Where they are heard, or where they are emitted? We don’t currently have direct answers to these questions, and it is exactly that ambiguity that can make sound so compelling, bonds it to the art world, and renders it a constructive theme for philosophical discourse. Sound does not fit neatly into our worldly rules, and while history tells us we have understood the biology and anatomy of the ear, and its basic functions for a very long time–Aristotle postulated a theory that the inner ear was filled with a special purified air, *aer ingenitus*, then in 1761 Domenico Cotugno discovered through dissection it was fluid rather than air, and concluded in his dissertation, *De aquaeductibus auris humane internae anatomica*, (1761) that there were acoustic nerves suspended and oscillating like strings to transmit the sensation of hearing to auditory centers in the brain–we still cannot easily define what exactly sound is, or at what point, i.e. when, sound is. Is it the point where an event pushes airborne waveforms towards the hearing ear; the point those waves enter the ear and convert the waveforms into electrochemical signals that are then transmitted to and processed by the auditory pathways of the brain, or the point of that processing itself? This is the act of hearing: perceiving sound.

Our histories of sound perception and light perception are very different. Professor Nicolas Wade asked the audience at the 2016 International Conference on Stereo & Immersive Media in Lisbon, “Why are so many pages given to vision than hearing? Because we have known more about the nature of sound than light. Vision possessed mystery and the problem”. (Wade, 2016) He gave some examples of early thought on sound:

- (570-490) Pythagoras demonstrated the mathematical relationship between the fundamentals of vibrating strings and harmonics.
- (384-322) Aristotle theorized about displaced particles.
- (1564-1642) Galileo Galilei theorized about the pitch of vibrating string.

- (1618-1663) Francesco Maria Grimaldi suggested light might operate like sound propagating waves through a medium, before Newton.
- (1756-1827) Ernest Chladni "father of acoustics" and Thomas Young (1773-1829). Published texts detailing knowledge of sound production, propagation, and reception, as well as the speed of sound.
- (1774-1842) Charles Bell Scottish, an anatomist on hearing.
- In 1827 Charles Wheatstone produced the first binaural augmenting instrument, before the stereoscope, he called a "microphone" (He coined the phrase, but Berliner invented the modern microphone in 1876) He knew sound was transmitted by waves through mediums, and his device amplified weak sounds. [13]

In their magazine, *Explorations*, Marshall McLuhan and Edmund Carpenter wrote, "Until writing was invented, we lived in an acoustic space (…) Speak that I may see you. Writing turned the spotlight on the high, dim Sierras of speech, writing was the visualization of acoustic space."[14] (Carpenter, 1973, p. 35) Walter J. Ong theorizes the inventions of writing and then printing turned an oral world into a visual space, locking words into a visual field. (Ong, 1991. p 117) Hearing dominance gave way to visual; perception is in part cultural. Sound didn't propose as much mystery, until we got to perception, where most of the sound perception theories are borrowed from light perception.

If we take it out of the visual realm philosophy of perception is changed and challenged. Though some of the most compelling theories of sound were borrowed, at least in start, from theories of perception of color. Contemporary philosopher Robert Pasnau's work in sound perception stems from this (Pasnau, 1999; 2000), and an integral stream within my own thesis here is based on borrowing terms in visual

[13] Wade, Nicolas. (2016, October 27-29). *Seeing with two eyes and hearing with two ears*. International Conference on Stereo & Immersive Media 2016, Lisbon, Portugal. http://stereoimmersivemedia2016.ulusofona.pt/

[14] Carpentar, Edmund. (1973). Sited in *Eskimo Realities*. New York: Holt, Rinehart, and Winston. p. 35

culture,[15] to be applied towards an aural culture. This is an argument not against a visual philosophy, but rather towards a sound and vision philosophy (cinema), to be fully challenged (eventually) with combining philosophies of perception of other senses, until we have a whole philosophy of perception that isn't inhibited by the limiting of the traditional five senses or divided by the categorization of "secondary qualities", or qualities dependent on "primary qualities"–shape, motion, arrangement of minute particles. Secondary qualities have the "powers to produce various sensations in us". (Locke, 1690; chap. VIII, sec. 10). While I believe the division of primary and secondary is deeply problematic,[16] Locke still gives power to the secondary qualities as a power of sensation, which is experience, the basis of what fills our mind with ideas as we grow.

It is worth mentioning that there are four methods identified by Casey O'Callaghan in his entry "Auditory Perception", in *The Stanford Encyclopedia of Philosophy*, (2018, para. 6-8) that can be useful to consider when working towards philosophies of perception that are inclusive to senses outside the visual realm. These are as well excellent terms when speaking on sound design, and I will be using them throughout this work:

1. **Translation**: information from visual perception studies towards aural
2. **Extension**: when considering visual perception, an extension to non-visual modalities may expose phenomena undetected visually
3. **Challenge**: comparative studies of situations where translation and extension does not match between the visual and other sense [an example of this is the acousmatic as described by Michel Chion, audio positioned neither inside nor outside the image (1994, pp. 128-31; 1999, pp. 17-57; 2016, pp. 139), which will be explored throughout this thesis]

[15] Visuality, as defined by Nicolas Mirzoeff in "The Right to Look", is "an old word for an old project (…) an early nineteenth-century term, meaning the visualization of history." The practice is "imaginary", not "perceptual" as what is being visualized is substantial and collectively seen, created from "information, images, and ideas. This ability to assemble a visualization manifests the authority of the visualizer." (Mirzoeff, 2011, 474) He quotes Rancière in that visuality presents authority as self-evident, that "division of the sensible whereby domination imposes the sensible evidence of its legitimacy." (Rancière, 1998, p. 17, as cited in Mirzoeff, 2011, 475)

[16] As well I do not believe we are born into the world with no innate knowledge; I will go into this further on in Chapter 2, where I will explain how we already begin learning through sensation in the womb, and sound is a major element to this earliest learning.

4. **Unified approach**: applies in a general manner to all perceptual modalities.

It is interesting to consider whether the unified approach even exists; or, in a manner closer to what this thesis argues, whether an approach that considers unified modalities and furthers them towards extension and connection, may allow us a fuller glimpse into how we perceive our world. This project will be considering these said methods as well in the process of applying Visual Culture methodologies towards an Aural Culture, and a critical aurality.

A philosophy of the perception of sound can reach towards a "further insights about the nature, objects, contents, and varieties of perception," when considering their spatial, causal, and temporal qualities. (O'Callaghan. 2016. para. 2) This thesis will also make the case for the act of listening to be included within a sound philosophy: to think about giving one's attention to a sound–a decisive action– and highlight that under the more general definition of hearing, the faculty to perceive sounds.

Through Theories of Sonic Perception

We can begin an overview of theories of sound perception with a useful foundational entry, "Sounds", from Casati and Dokic in *The Stanford Encyclopedia of Philosophy,* which organizes issues of sound perception through spatial properties, including: *proximal*, from where the hearer is (e.g. that tree falling in the forest would not actually make a sound without the hearer there); (2014, chap. 1.2) *medial*, within the medium of the resonating object and hearer (e.g. waves in air, water, solar plasma); (2014, chap. 2.1) *distal*, which locates sound at the resonating object (e.g. like colors and shapes, considered often to be a property of the material object), (2014, chap. 3.1) and *aspatial* theories that have no spatial relevance at their core. (2014, chap. 4.2) This section will go into these theories briefly, but not exhaustively, as I believe that there is truth and useful explanation in all of them, but that the separation of category, like the separation of senses, is where we can get stuck. An example that will come up often in this work is how recordings, and their later uses and re-recording, throws categories of time and space into question.

I hear, therefore there is sound. Proximal theories of sound hold at their core the psychology of perception that considers sounds as sensations that are properties of each hearer. This defines the sound as the sensations that are produced when the sound waves enter the ear, as the objects of audition. This speaks to the subjectivity of sound, as an example; we all hear differently based on the relationship of space (expressed sonically through distance, echo, reverberation, and other filters) between the sounding object and us. (2014, chap. 1) The medial theories immerse both sounding object and hearer in an elastic and vibrating medium. The sounding object creates a disturbance in the medium, setting off waves of particles in back-and-forth motion, bumping into each other and setting off another wave at a certain frequency and amplitude–a compression and depression pattern–losing energy over time and distance. (2014, chap. 2)

This brings us back to Aristotle and his theory of sound as movement of air.[17] Early theories led to the wave theory.[18] Renè Descartes wrote in *Passions of the Soul*, that we do not hear the actual sounding object sounding, but rather movements coming from them that then "excite some movement in our nerves which by their means pass to the brain (…) cause diverse perceptions to become evident to our soul." (1649, p. 11) When I initially studied sound physics, I aligned myself more with wave theory, as there is something eloquent to its connection between the sounding object, the medium, and our ear, on a propagation line. But there are some challenging critiques to the theory as well, for example metameric sounds that feel the same to the ear; let's say in pitch, though the properties of the mediums they travelled in are different.[19] And we might ask where is the sound then, when separated from its sounding object and in motion? And would this mean sound is still dependent on its sounding object to make it a sound in that medium, to start the process? Would that render sound a process that connects it as a series of events in time?

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[17] *On the Soul*, 420b 10: "sound is a particular movement of air"

[18] "Sounds are produced and heard by us when…a frequent vibration of air shaken in tiny waves moves a certain cartilage of the tympanum in our ear… the more frequent the vibration, the higher the pitch; the less frequent, the lower." (Galileo, 1623). But Galileo also supported proximal theory, perhaps wisely sensing the complexity at hand.

[19] Casati, Roberto and Dokic, Jerome, "Sounds", *The Stanford Encyclopedia of Philosophy* (Fall 2014 Edition), Edward N. Zalta (ed.). While I have seen this theory stated multiple times in my readings on sound perception, I have yet to see an actual example or study cited. It seems a case where color theory has been translated, but I'm skeptical that this argument could be applied with strength.

That gets complicated when we consider that sound perception locates sound as where the sounding object is, and there are arguments as to whether that sense of "center" is more sense of location (e.g., a sense of both distance from hearer and direction), or direction alone; and to how much of this is an auditory illusion. (Casati & Dokic, chap. 2.3.3.) But center could be considered origin, and not pure phenomenon–we know there is a sounding object; we know this is an origin, and sometimes our perception directs us to it as the center to which the soundwaves are expanding from. (Sorensen, 2007, chap. 13) But not always. There is also the consideration of a distinction between source medium, and environment medium. The source would be the actual material of the object sounding, differentiated from the medium the waves then travel through before being received.[20] This all gets then further complicated when considering recordings, which I will address later in Chapter 2.

Considering waves in source medium brings us to the door of the distal theories of sound; one of which frames sounds as properties of material objects, like shape, or (many think) colors. The actual Property View has immediate, though in part semantic, problems within the idea that objects produce sounds (though, clearly in a way most do). But the related Event Theories are interesting and relevant to explore here–sound as located and temporal events.[21]

Located Event theory has sounds located at their source through located vibration processed. (Casati & Dokic, chap. 3.2) Casati and Dokic (1994) theorize that a medium is required which transmits information from a vibrating object to the hearer, yet the medium that transmits is not essential to the actual existence of the sound; sounds are either events or extended processes in time, with a beginning and end. If we consider the tuning fork example, in this theory it begins to vibrate and ends its vibrations whether immersed or not in a vibrating medium, the medium simply reveals in audition. This places the sound in a clear time frame, whether heard

[20] A useful example is a tuning fork, which will be a sounding object that will be returned to multiple times in this thesis and was an integral part of the soundtrack for one of the case studies, specifically for characteristics and properties of relationship between itself, as a sounding object, and its environment.

[21] Casati, Roberto, Dokic, Jerome and Di Bona, Elvira, "Sounds", *The Stanford Encyclopedia of Philosophy* (Summer 2020 Edition), Edward N. Zalta (ed.), URL = https://plato.stanford.edu/archives/sum2020/entries/sounds/

or not.[22] However, problems arise again, when heard, of location–some sounds still elude location, and wave theories allow this. This gets interesting when we consider recorded sounds, and especially sound design, which uses dislocation and mislocation of sounds to affect perception. John Kulvicki takes this a step further in the Dispositional View, stating that; "sounds are dispositions of objects to vibrate in response to being stimulated. Sounds are perceived transiently, but they are not perceived as being transient and they are not in fact transient" (Kulvicki, 2008b, p. 2) As color is essentially the result of an object stimulated by light, compression waves (sound) are a result of an object stimulated by an impulse containing relevant frequencies, or what Kulvicki calls onomatopoeically, a "thwack". (2008b, p. 4) The thwack reveals the sound in the object by stimulating the frequencies it responds better to (again, think tuning forks). Kulvicki claims, "objects sound roughly the same whether it is white noise [i.e., an impulse] or something reasonably far from it that stimulates them". (2008b, p. 9)

This aural constant within a sound field will be a point returned to when I bring up further on Information Bearing Elements, or IBEs. Dispositional Theory also seems to reveal a spectrum of dispositional constants, including constant characteristics to attack patterns, decay patterns, vibration patterns, patterns when rubbed or brushed, or broken–these patterns seem to both support the theory that there are stable sound characteristics to objects, as well as endorsing the theory that there are other unheard sounds involved–within the dispositional account–"invisible"…an idea that will be explored in some of my case-studies further on. (Kulvicki, 2008b, p. 14)

So, a thwack reveals a sound–and then? What is the thing that happens after? And what if the initial sound is outside the constant, as happens sometimes? What of recorded sound, or transmissions, where there is distance from the sound made? Kulvicki calls these hearings. (2008b, p.8) Separate but attached by causality to the sound as disposition, we experience episodes of hearing the dispositional sound, and the sense of the sound lasting past its thwack, or whatever sounded it, is an impression (perhaps like a recording). The Relational Event Theory gives a bit more weight to that hearing moment, a hybrid theory holding sounds as relational events involving

[22] Ibid.

both source and surrounding medium. (O'Callaghan, 2007, pp. 65-66, 70) O'Callaghan postulates that when Aristotle describes in *On the Soul* sound making as happening because something strikes something else in something, which strikes something else again, "and this last is air", he meant that sound is not movement of air, but rather a disturbing event on a medium from a vibrating object that sets it moving. The sounds depend existentially on the disruption of that medium. (2007, pp. 60-61)

All of these theories inform my work in different ways, as I will show throughout this thesis. They will come up again, and the problems with each render them for me not flawed, but incomplete with missing pieces. Or rather, they are pieces themselves to a whole that is on a level we have not been able to yet imagine or put together, most likely due to our own limited perception–we can only even sense sound on a limited spectrum. If we consider what we call average human capacity for hearing alone, we're in the very much-generalized range of 20Hz to 20 kHz, which is leaving out the Deaf,[23] the recently-deaf, and hearing loss by aging and injury–about five percent of the world's population, or 360 million people.[24] Hearing loss is also on a spectrum, really none of us hear the same, and this is for a myriad of reasons that will be explored throughout the thesis, from mechanical to cultural, with many in-betweens. Hearing is subjective, so any theory that holds hearing as the point of sound, needs to embrace that complexity.

What can happen if we do away with holding sound perception to space and try to think about sound non-locationally? Aspatial theories don't completely do away with space but try to resolve the back and forth of sound perception theories that ping-pong between the sounding object and/or auditory perception as intrinsically special. For example, philosopher Brian O'Shaughnessy does not believe that sound has no spatial quality, but that, "while we have the auditory experience of hearing that a sound comes from (point) p, we do not have any experience that it is here where it

[23] Deaf, with a capital D, is the preferred description for those who are pre-linguistically deaf, their whole lives, rather than those who became deaf later in life, after language acquisition. For someone who is Deaf, sign language is their first language.

[24] McPhillips, Elena. 2016. *World Wide Hearing Loss: Stats from Around the* World. Retrieved January 7, 2019: https://www.audicus.com/world-wide-hearing-loss-stats-from-around-the-world/

now sounds". (O'Shaughnessy, 2000, p. 446) There is also the consideration to our own inference, our knowledge of things and happenings with how sound basically works: "…awareness of environmental things and happenings thanks to audition is epistemically mediated by awareness as of sounds and auditory objects, but does not itself constitute auditory perceptual awareness as of those things and happenings." (O'Callaghan, 2016, chap. 2.3.1) This will again be later discussed with Information Bearing Elements.

Which does this thesis support, or rather bring into argument? In a way–in varied, particular ways–I will bring in support from all of them, and connect this to the Acoustic Niche Hypothesis and Information Bearing Elements, taking into account a full soundscape, which includes within the *anthropophony* (environmental sounds that are created by human beings), the *biophony* (the acoustic environment often thought of as "natural" and including animal sound), and *geophony* (non-animal sounds such as weather and water); (Krause, 2008, pp. 73-80) object, medium, and hearer. Event Theory under Aspatial Theories of sound perception can be especially useful with this. If we consider the ontology of listening to our soundscapes with the ontology to listen to music–ontology to hear sounds as music–we can hear sounds as events of whose happening is through our perception, though not completely reliant on it. (Scruton, 2009, pp 28-30, 57-58) Even further and flipping Scruton's argument a bit, we can consider the probability, as Krause proposes, that listening to our environment is what actually and initially shaped our ontology of music and sense of tonality within it. "Humans, like other animals in the world, were drawn to geophonic voices because they contained fundamental messages: those of food, a sense of place, and spiritual connection." (Krause, 2012, p. 39)

Like in color perception, we could also allow for auditory illusion, and with so much subjectivity, this illusion is an integral, constantly non-constant part of auditory perception. To put simple, our brain seems to base our perception of the world on our system's sampling of that world, organizing through patterns, and sometimes filling in the gaps.[25] Accepting illusion–what we call illusion–is accepting complexity. Illusion by its general use definition is often negative, for example an

[25] Jung, Yoon Mo & Shen, Jackie Jianhong. 2008. "First-order modeling and stability analysis of illusory contours", in *Journal of Visual Communication and Image Representation*, Volume 19, Issue 1, January 2008. pp. 42-55

idea or belief that is not true, or something that is not really what it seems, a trick. If our senses are a complex network, working together more as a matrix than a separate five sense,[26] then what we call illusion may be an important part of how we sense our world. Though illusions may distort what we generally consider reality, they are interestingly shared by most sensing beings.[27]

As a Hyperobject

As a way to explain the complexities of a sound, and sound and its relationship with the *Wayback Sound Machine*, as relational, material, and phenomenological, and as illusion and uncanny, I turn to philosopher Timothy Morton's concept of the *hyperobject*. Morton coined the term in his book, *The Ecological Thought*, referring to things that are massively distributed in time and space. (Morton, 2010, p. 130) I will stress that I am specifically using the term and its descriptions outside of its original home in object-oriented ontology for this thesis, though future work with the Wayback Sound Machine and OOO could be interesting, in regard to relationships between human and nonhuman in a shared soundscape. (Morton, 2013) Some characteristics of hyperobjects (such as Global Warming) are:

1. **Viscous:** Hyperobjects stick to any other object they touch, no matter how hard an object tries to resist. In this way, hyperobjects overrule ironic distance, meaning that the more an object tries to resist a hyperobject, the more glued to the hyperobject it becomes.[28] (Morton, 2013, p. 10, 29) Sound does not so much adhere, but touches, moves through, bounces off, effects particles, affects bodies. There is no resistance, though one might extend the term soundscape as a hyperobject in consideration of this thesis.

[26] We are discovering more and more about the complexity of our sensory reception, including sensory receptors in the muscles, tendons, and joints–creating the sense of motion, the inner ear–giving the sense of balance, receptors in the circulatory system that are sensitive to blood pressure, carbon dioxide level, or pressure changes, receptors in the digestive tract and brain that mediate hunger and thirst. Some sensory receptors seem to work together as sensory structures to create nerve impulses, such as auditory cells and vestibular receptors towards balance. Pfaffmann, Carl. 2017. "Human Sensory Reception". Encyclopedia Britannica, inc. Retrieved October 2017: https://www.britannica.com/science/human-sensory-reception

[27] Solso, R. L. 2001. *Cognitive Psychology* (6th ed.). Boston: Allyn and Bacon.

[28] Morton, Timothy. 2010. "Hyperobjects are Viscous", in *Ecology Without Nature*. Retrieved April 5, 2017: http://ecologywithoutnature.blogspot.com/2010/10/hyperobjects-are-viscous.html

2. **Molten or Temporal Undulation:** Hyperobjects are so massive that they refute the idea that spacetime is fixed, concrete, and consistent. (Morton, 2013, p. 33, 55) Sound has already been argued to do this, and that argument will continue throughout this project. The Wayback Sound Machine as well considers living archives as hyperobjects, archives in constant growth and change and challenge, a generative process in use, not objects that are fixed to a time and place and frozen there.

3. **Nonlocal:** Hyperobjects are massively distributed in time and space to the extent that their totality cannot be realized in any particular local manifestation. Thus, nonlocality describes the manner in which a hyperobject becomes more substantial than the local manifestations it produces.[29] (Morton, 2013, p. 10, 37) What I argue is distributed towards nonlocality is the elusive nature of sound, to the point of much argument as to what exactly, or where exactly, it is. In this regard, nonlocality is a feature of sound, even as it carried directional information as characteristic.

4. **Phased:** Hyperobjects occupy a higher-dimensional space than other entities can normally perceive. Thus, hyperobjects appear to come and go in three-dimensional space, but would appear differently if an observer could have a higher multidimensional view.[30] (Morton, 2013, pp. 60) Certainly…when it comes to sound, we tend to visualize it as a flattened, one directional waveform, when it is at its essence multidimensional.

5. **Interobjective:** Hyperobjects are formed by relations between more than one object. Consequently, entities are only able to perceive the imprint, or "footprint," of a hyperobject upon other objects, revealed as information. The hyperobject "floats among objects, 'between' them; though this between is not 'in' spacetime–it is spacetime. (…) Hyperobjects disclose interobjectivity." (Morton, 2013, pp. 69) This could sit with multiple of the definitions above, and relationally ties together many of the disputes.

This thesis takes sound as a hyperobject; a *sonic hyperobject* defying and at times disrupting time and place. This thesis will also consider how sound design can work as a counter-aurality towards hyperobjects such as the Climate Crisis. The

[29] Morton, Timothy. 2010. "Hyperobjects are Nonlocal", in *Ecology Without Nature*. Retrieved April 5, 2017: http://ecologywithoutnature.blogspot.com/2010/11/hyperobjects-are-nonlocal.html

[30] Morton, Timothy. 2011. "Rutgers Talk: Hyperobjects are Phased", in *Ecology Without Nature*. Retrieved April 5, 2017: http://ecologywithoutnature.blogspot.com/2011/02/rutgers-talk-hyperobjects-are-phased.html

Wayback Sound Machine is a project that, while not necessarily massive, can't be fully known as a totality, but can be better known, sensed, understood, through its affects.

I.1.b. Nostalgia and memory

Having given thought to what sound may be, or where it may be, we can consider now the engaging question of whether sound is public, or private. If sounds are framed as sensations, they are kept internal, and hearing them is a private act experienced without mediation. (Maclachlan, 1989; O'Callaghan, pp. 79-83) Except, I would extend, internal mediation, which could include other senses and memory. The sounding object is heard indirectly. (Maclachlan, 1989; O'Callaghan, p. 80) Sounds result from activities or interactions of material bodies and thus are experienced as distinct or independent from them (Nudds, 2001, p. 222).

Sound is shared, yet sound is subjective; like our experience of time, and thinking of other times. There are constants to considering sound temporally, rather than spatially. O'Callaghan describes how sound objects are "tracked", like special characteristics to objects in vision, by their pitch and temporal characteristics. (2008, pp. 814-815) The experience of this can give us information about the happenings that produce sounds and extend that information through the environment they were produced in. That extension can include that environment through its various times. From the nature of a sound object in its environment, to the happening of its sound production, to the perception of that sound object and consideration through sonically carried information of its environment, to the extension and addition of the internal perceptive characteristics, and those triggered by this aural information–we have a complex sonic path, a matrix and ecology of time and place to consider.

In *Book 11* of *Confessions*, St. Augustine wrote that, "Perhaps it might be rightly said that there are three times: a time present of things past; a time present of things present; and a time present of things future. For these three do coexist somehow in the soul…" (387. Chapter 20, Heading 26). This project's case study artworks argue and demonstrate that those three do indeed exist within us simultaneously, and that they are the woven fabric of our perception, rather than existing separately. Nostalgia, and all our attempts and ways to travel in mental time and attempt a reconstruction of the past in anticipation of the future. The fluidity and

ease of process between these times speaks to their connection. A longing through memory of something one cannot return to, other than the experience through what we perceived and processed, preserved and present to ourselves once again through captured and translated bits of the remembered–the smell of the fires, the sound of the waves, the cold of the metal, the fading light. Like Bergson's mirror example, comparing memory to what a reflection in a mirror is to the object being reflected. "The object can be touched as well as seen; acts on us as well as we on it; it is pregnant with possible actions; it is *actual*." (Bergson, 1896, p. 134) The artworks discussed in this thesis actualize forms from and of the past into our present–like memory, like reflection.

Once again, we are faced with duality of the interior and exterior body. Along with the traditionally separated five senses, we may be given an introspective internal sense, to process our internal world. What this doesn't allow is the network of affect between the exterior and interior in constant process, how a "present" external sense can pull from our inner archives of processed and organized sensory information an internal, past sense and present the associated memory. When a present sound triggers a memory; that experience is non-linear, which is also the experience of editing a recording, both visual and aural. Our present is always perceived with a touch to the past and touch to the future–leaping around a timeline, should we consider it a line. Even the sound that enters us is a reflection of the event that already happened, that already sounded, that is already past. Here I consider Bergson's reflection again, become *actual* with our processing. (Bergson, 1896) We extend this with our tools, our recorders and recording medium–the ability for extension and repetition, which has shaped so much of the world, and the art world. And to use a recording in the present, from the past, involves a consideration towards its future composition. "Listening, as if to the dead, like a medium who deals only in history and what is lost, the ear attunes itself to distant signals, eavesdropping on ghosts and their chatter. Unable to write a solid history, the listener accedes to the slippage of time." (Toop, p. VII, p. X) While writing much on the haunting characteristics to sound and listening, Toop side-steps Derrida's complicated hauntology concept with a nod to him. In *Specters of Marx the State of the Debt, the Work of Mourning, and the New International* (1993), Derrida uses the term to describe the elements of the past that persistently return to us like a phantasm, and

like a phantasm, they don't specifically belong to the past, as their ghostly characteristics are very much of our present with. He initially used it referring to the ever-ongoing relationship of Europe as haunted by communism, the original presence replaced by a deferred non-origin with no specific moment of entry into existence (Derrida, 1993, p. 47) This thesis will explore both Toop's haunting, as well as hauntology, further on in Chapter Three, but we can already imagine the concept's fit when considering artistic representations of the past.

I.1.c. PRESENTATION and (re)presentation: history and heritage

What can giving voice to history and heritage tell us about the past in the present, and what could that mean for our future? Mirzoeff's *The Visual Cultural Reader* introduces us to methods for critiquing and considering the "lives, powers, desires, and needs of images". (Mirzoeff, 1998, p. 3) It is a technique of colonial and imperial practice where "power visualizes History to itself" (1998, p. 3), claiming authority, which can produce consent. In a related sense, on a different stage, this was the exchange between the audience and myself in a case study project, *Come Kingdom Come*,[31] which I write about in Chapter Three. But by blinding myself, visuality gave way to and signaled for aurality, directing the audience to tune their ears and follow suit in an exchange of sensorial hierarchy–the ears shall lead in observation and information gathering, the ears here will know.[32] This is an unusual role for most human ears. A more usual route in art and design, including "Hollywood" and marketing, is the use and exploitation of our modern relationship with sound, which is highly passive and highly ignored, but always taken in. If a critical sensing is of an essence to an informative embodied experience, how can we create a sensual past, and what should be considered within that act? This brings us to the work of Jennifer Heuson, and her fieldwork and practice-based research in the Black Hills of South Dakota.

> "…so I just sit with him and listen, trying to hear all he cannot say…" (Heuson, 2015b, p. 315)

[31] http://www.mailecolbert.com/proj-kingdomcome.html

[32] This was information was gathered in discussion with the audience afterward the performance at SUNY Binghamton, and based on their reports of their experience during that moment and how it affected the remainder of the performance for them.

The example she describes is found in The National Museum of Woodcarving, housing a collection of woodcarvings, many automatons and sound-tracked with music and narration, creating an immersive environment and "a central tenet of frontier mythology and colonial conquest". (Heuson, 2015b, p. 138). Not every wooden carving has a voice, not every story aurally illustrated. She describes a tall "Indian" at the entrance, greeting the visitors with no voice and no name, a shaker in his hand never sounded, frozen silent. All around are the other sounds the narrative associates with modernity–mining and saloons and trains and gears and the ringing cash register– woven into the narrative of the "Wild West". We imagine a quiet past, where loud was modern, desirable, even curated. The only animated "Indian" scene is when a particular button is pushed, the woman's chest breaths up and down, the man begins to beat his drum slowly, silently…neither speaks. (Heuson, 2015b, p. 137)

St. Augustine explored exhaustively in *Confessions* the concept of subjective time. And this fits, again, with the notion of the clear and separate internal and external perception of time. But I also argue against the duality that the present is a concrete, worldly thing, and the past and future solely subjective and singular to the sentient observer. We have artifacts of the past, from the past. Let's consider a sound archive, like the museum, as one of those. Now let's imagine an archive of endangered night insects, and let's ask an imaginary artist to create a concert with these recordings. Now we have an audience; the sound of the old recording medium lets the audience know these are sounds from the past, there is a carried aural signal of night in the ghost insects' calling which calls up memory and past sensation in the audience members–infusing their shared experience of this presentation with threads from intimate and internal lives. These insects sounded, also mostly invisible when heard in their past. What marks their disappearing is their silencing, what marks in the present their disappearance is to contrast that to what was sounded once, what was heard once…sounded and recorded then and heard now in this moment of creation. There are many times happening here; some of them are subjective, some of them are shared collectively. When the imaginary audience is told this imaginary concert the sounds were of endangered insects, this information attaches to the sonic information, conjuring, and affecting what they just experienced. Perhaps there is information on the connection of these insects to our world, to our worlds. This could be a moment of what Brandon Labelle describes as *Sonic Agency*, where contemporary resistance is

auditory, where the unheard, the disappeared, are sounded and resonate within the listeners, perhaps provoking thought that leads to action. (2018, p. 3)

What is past? We can present that. We do it all the time. Presentation: the giving of something to someone; the manner of style in which something is giving or displayed; from the Latin *praesentare,* to 'place before'. Present is to be in a particular place, or to be fully involved in what you are experiencing, happening now. Presentation if the act of presenting, something presented such as a symbol or image that represents something else; something offered or given; set forth for the attention of the mind; or a persuasive and descriptive account; an immediate object of perception, cognition, or memory. *Prae*: before, *esse*: be → *praeesse* → present: being at hand → present.[33] (Re)present. Represent: to bring clearly before the mind; to serve as a sign or symbol of; to portray or exhibit in art, to depict; to serve as the counterpart or image (and sound?) of; to act the part or role of; to take the place of or act in the place of; to correspond to in essence; to serve as a specimen, an example; to form an image in the mind or apprehend through an idea–to recall in memory. Re-present: to present again, or anew.[34]

What can we gather from sounding the past? For one thing a sound philosophy of time in material, and this with vision can explore the powerful effect of asynchronicity, and the acousmatic as described by Chion (1994, pp. 129-131; 1999, pp. 17-57; 2016, pp. 139)–that effect of the disembodied sound off-screen, like a deity, or perhaps what St. Augustine would call eternity. Time alluded to or conjured outside the frame. The term was first used by Pierre Schaeffer to describe listening to *musique concrete*, and sounds from the radio, records, telephones, tape records–sounds that one hears without seeing the causes behind it. (Schaeffer, 1966; Chion, 2009, p. 11) The opposite of what he calls direct listening, when sound sources can be seen. (Schaeffer, 1966; Chion, 2009, p. 11) The "audiovisual complex", as Chion terms audio-visual perception, is split, isolating the sound and changing the way we hear. He felt the experience reduced sound to the act and experience of hearing alone, creating a "sound object," and simultaneously a perceptual awareness for the listener.

[33] Definitions from the Merriam-Webster Dictionary.

[34] Ibid.

(Schaeffer, 1966; Chion, pp 11-13) This concept is investigated with some of the artistic case studies in this project as well.

Through frame and immersion, another presentation

While this thesis explores media archives, and potential approaches of artists working with them, and the potential of sound within them, I write almost exclusively with a concentration on film and video, and sound's relationship with those mediums and the artists working with those mediums. The reasons have to do with the phenomenological nature of time-based media, and its relationship with time and memory, its ability to jump through time and space, to stitch together new times, new spaces. And it also has to do with our important and complex relationship with the frame, with the image within the frame, and the sound that carries us outside the frame. The perceptual 'something' is always in the middle of something else, it always forms a part of a 'field'". (Merleau-Ponty, 1962. p 4) The field, the frame.

We are push and pull from the beginning, in constant and fluid flux with our boundaries and restraints. A young human will test; will push to be pushed back, to know what boundaries surround them, to feel those boundaries allows them to push themselves further with a sense of safety. Boundaries and borders are important to us, as much as we might at times fantasize escaping them, we keep coming back. A frame, as a structure, separates the inside from the outside, gives us a dualistic impression to lean on. It creates a visible and tangible border that allows this to be visualized without touch, from afar if we rather. It keeps, it emphasizes, and it defines a point of view. We can choose to put something in it; it is a slice of the world we can control. It can shrink our world down to a size and state that we can handle, in which we can investigate, in which we can master. It gives focus to the wandering eye. In language, it does the same for an idea, urging the plan, constructing the shape. In biology, it helps towards an idea of our physical body as a whole, how we see the shape of others, then ourselves, with our parts united and separate. In film and video, it is the border that encompasses what the maker wants to be seen, and what is transmitted for the audience to see, the line around intention. In film and video, it is also the static image–one of 24 per second, or 30 per second, or 50 per second, and so

on–that in collaboration with our eye and mind, the persistence of vision, will create the illusion of movement, of change over time, so of time itself.

The frame in social science speaks of a social phenomenon involving a set of concepts and theories on how we organize each other and ourselves in reality. For example, a frame in thought could be an interpretation of reality, and a frame in communication could consist of the communication of that interpretation of reality between two actors. (Druckman, 2001, p. 225) The frame is postmodern, within all its antiquity. A 'schema of interpretation', collected through time and experience of biological and cultural influences, then utilized in the attempt to make sense of the world. This makes the frame sound two dimensional, which is how we tend to think of it first. But a frame can also increase the capacity for immersion, allowing us to focus and go inward and deeper into the visual, and into ourselves. A frame can help focus the challenge to itself. A frame can be a window, and if a frame is a window, it can be an open window allowing its soundtrack and the soundscape of the interior and exterior to merge and expand. This is what cinema can do with the relationship of the screen and sound, our perceiving bodies with their biological and cultural influences, and the push and pull between them. [35]

Salomé Voegelin describes how "sound narrates, outlines and fills, but is always ephemeral and doubtful. Between my heard and the sonic object phenomenon I will never know its truth but can only invent it, producing a knowing for me. This knowing is the experience of sound as temporal relationship." (Voegelin, 2010, p. 5) She points out that this is not a relationship between one thing and another, e.g., the dualism of the sounding object and the listener, but "the thing is sound itself". (2010, p. 5) Sound *is* a relationship between. Like cinema is a relationship between what the filmmakers create and the audience, cinema *is* that between. The film sound narrating, outlining, and filling.

I.2 Methodologies: listening to the past → a critical aurality

[35] These thoughts led to the *Sonic Field* series launch, *Soundtracks for Strange Days*, during the 2020 Covid-19 pandemic's first months. This will be written about more in detail further on. https://sonicfield.org/2020/05/call-for-works-sonic-social-distance-and-soundtracks-for-strange-days/

Accessing an Aurality**: What can giving voice to history and heritage tell us about the past in the present, and what could that mean for our future?** This research is in part an investigation into an interdisciplinary use of terms and methodologies from visual studies, towards an application in sound studies, in a similar method that perception studies took when converting light studies to sound. This is to say, that this project will work to highlight the interdisciplinary relationship between the two, rather than a superimposition of one area over another. The crossovers, and even areas where visuality is not so commensurable to aurality, still reveal valuable information and application towards the currently quite changeable borders of critical sound studies. I have found the work of Marita Sturken and Nicholas Mirzoeff on visual culture particularly applicable towards a study of aural culture. Visual Culture came together in the 1990's to, "investigate the convergence of questions of representation."[36] Visual Culture methodologies are already being applied towards considering the representation of images in our visual archives, this project calls for the same to be applied to our aural archives.

> I revisited John Berger's Ways of Seeing (asking myself why there was no equivalent Ways of Hearing) and found myself questioning aspects of his emphasis on seeing, particularly his belief that seeing establishes our place in the surrounding world. (Toop, p. XI)

The limited (but growing) literature I have found existing on aural culture has relationships to sound ethnographies and anthropologies, with a tendency to be quite recent, and most, such as Bull and Back's *The Auditory Cultural Reader,* (2003) and Smith's *Hearing History, A Reader*, (2004) are attempting to address a world that gives preference to the consideration of visual over aural. Many of these theories and methods display a need for more sensory consideration in cultural research in general, and this project will make a clear relationship between the application in the aforementioned fields, with the arts and artistic studies, as well as ecology.

I came to the term "aurality" writing with researcher and artist Jennifer Heuson on the subject of the possible adaptation of terms and methods used in visual

[36] Mirzoeff states in the Sound, Vision, Action Colloquium at McGill University 2014 organized by himself, sound studies scholar Jonathan Sterne, and Tamar Tambeck. Retrieved June 5, 2016: www.soundvisionaction.cc

studies towards a sonic equivalent.[37] Sound historian Veit Erlmann defines aurality as the interpretation of the culture and biological, and also states that aurality is still a matter of, "percussing, discussing, percussing." (Erlmann, 2010, p. 342) Like a diagnosis, knowledge comes through examination and often experimentation. Cultural and biological influences and information will play an important role when further on we relate aurality to the relationships of listening bodies within a soundscape, exploring this with the Acoustic Niche Hypothesis and Information Bearing Elements. "Aurality" is defined as the quality, condition, or degree of being aural, of the ear or sense of hearing. "Aural" refers to the ear, to hearing, an act that is often passive. "Oral" to the mouth, to speaking, an act that is always active.[38] Listening is an active aural act, and an activity increasingly less practiced. We are becoming un-tuned to the bombardment of information of our surroundings, to the information through our devices. We are increasingly passive in how this information enters us; as hearing is an embodied act, we embody whatever this information may be. My thesis addresses how sound art and design, with a focus on listening, can create counter-auralities to passive hearing. A counter-aurality is borrowing the term *countervisuality* from Nicolas Mirzoeff, who defines it as a way of not just doing (in his case looking, in this case listening) differently, but an attempt to reconfigure, dismantle, rupture, how we have been doing (looking, listening) it. (Mirzoeff, 2011, p. 24) Sound enters us "pure", we perceive all sound in our frequency range, there is no earlid[39] to close sound out. Listening requires a choice to concentrate, and activation in parts of our brain that often overlap the areas we use when speaking. We listen, we process, we can consider, we can express our consideration and expression of what we listen to, and what we listen for; can transfer information and create new information within the relationship to our "audience". This can happen in many forms, have a use through many applications, and be effective in many areas.

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[37] I would like to further note that within an early investigation, I read the work of Jennifer Heuson, who had recently conducted quite extensively research into the question of an Aural Culture, aural politics, and the use of the term aurality, discovering her research has moved my work forward considerably.

[38] Radboud University Nijmegen. 2010, August 16. "Speaking and listening share large part of brain infrastructure." *ScienceDaily*. Retrieved September 29, 2016: www.sciencedaily.com/releases/2011/08/110816084007.htm

[39] While the term "earlid" is often associated with R. Murray Schafer, as used in *The Tuning of the World* (1977) to describe the physical inability to close out sound from a hearing body, the term has been around since the mid 16th century. Retrieved December 8, 2019: https://www.lexico.com/definition/earlid

> Aurality is not just about sounds, but about how hearing and listening and even imagining sounds works to generate emotions and affect as well as creating atmospheres that are both lived in and alive. (Heuson, 2015b, p. 30)

In *The Visual Culture Reader*, Mirzoeff describes Visual Culture as "critiquing the lives, powers, desires, and needs of images". (Mirzoeff, 1998, p. 3) We can replace "images" with "sounds" as a method towards a critical aurality. He describes visuality as a technique of colonial and imperial practice where "power visualizes History to itself", (Mirzoeff, p 3) claiming authority to produce consent. Aurality examples of this can be found in music, archives, radio, television, cinema, news, and as Heuson writes, museums–all forms of sound design in our cultural institutions.

It can also be found in nature, or rather what we consider Nature. The sounds of industry were aestheticized, marketed as a positive sign of progress and Western development. That same noisy progression and pollution that has led to our current Climate Crisis was also the noise that set out to conquer and tame Nature and indigenous people, rendering silence and voicelessness in the face of such volume. Mirzoeff writes in the section "Anthropocene (An)Aesthetics," in "Visualizing the Anthropocene," (2014) on how the human conquest of Nature aestheticized our landscapes (and soundscapes) pollution (think of the sound and smoke of factories portrayed as symbols of progression), leading to a loss of perception (aesthesis, those factories become usual and unremarkable in our landscapes), becoming what he calls *anaesthetics*, to be expected and tolerated. (p. 220)

In the essay, "The Right to Look," (2011) Mirzoeff places listening as a base of action, as a way to be present. This is expanded upon by Dr. Isabel Ferreira Gould, in her chapter, "Acoustic Remains: Listening for Colonialism and Decolonialism in Isabela Figueiredo's Life Writing", (Gould, 2018; 2020) when she writes of aural remembrance, and uses the legal term, *earwitness*, when "listening connects the self to others and functions as a way of resisting from within". (Gould, 2018;2020, p. 1) In the archives of Figueiredo's writing, Gould finds "ear-witnessing and aural remembrance are intimately connected to the politics of self-representation in the text" and can only be reconstructed as echoes of the past through the writer's autobiographical voice in the present. (Gould, 2018; 2020, p. 4) Voegelin points out

that while the desire to see a whole, leading us to maps and borders, and traces and certainties, is what is behind Visuality, with the outcome of a sense of objectivity, auditory engagement "when it is not in the service of simply furnishing the pragmatic visual object, pursues a different engagement. Left in the dark, I need to explore what I hear. Listening discovers and generates the heard." (Voegelin, 2010, p. 4)

R. Murray Schafer, founder of the World Soundscape Project, and author of *The Soundscape: Our Sonic Environment and the Tuning of the World,* (1977) begins a foundational beginning with his work towards a counter-aurality, but it is problematic in its own privilege and separation. Even the chapters in Part One separate "The Natural Soundscape" (p. 15) from "The Rural Soundscape", (p. 43) to "From Town to City". (p. 53) He divides our soundscapes into a dualistic lo-fi or hi-fi category, the hi-fi soundscape allowing for more discrete sounds to be heard, allowing for more diversity. This is indeed often the sign of a healthy and functioning environment, and humans as well as other being will get stressed in what he calls a lo-fi soundscape–the stress of processing so much acoustic information, if you aren't used to it.

He writes the lo-fi soundscape was introduced by the Industrial Revolution, and then extended by the Electric Revolution. (Schafer, 1977, p. 71) He refers to it as Sound Imperialism. "Western Man leaves his calling card all over the world (…) local culture is pulverized into the background." (Schafer, 1977, p. 77) Leading up to Schafer and Acoustic Ecology's criticisms of urban noise as purely negative, in need of eradication. This doesn't allow room for a critical counter-aurality that takes into full account the many people that for many reasons have to or choose to (or often a complex mix of both) live in noisy soundscapes like cities. To properly address the issue of noise and its affects in these places, we need to address their history, their relationship with their history, and the relationships of its inhabitants with the soundscape and what they may or may not call noise–we need to consider complex and complicated objective and subjective auralities.

I.2.a. → composing the past → a critical sound design, a critical ear

The approach this thesis takes is an approach Voegelin describes, challenging simultaneously the ideas of objectivity and subjectivity (as she states a

good philosophy of sound art will do), with the collective, relations, meaning, and sense-making. “The understanding gained is a knowing of the moment as a sensory **event** that involves the listener and the sound in a reciprocal inventive production”. (Voegelin, 2010, p. 5-6) A **sonic sensibility**, for Voegelin and this project, is a method towards making thinkable the complexity and connection of time and space, with critical evaluation and engagement. (Voegelin, p. XVI)

To ask again, if sensing is of an essence to an embodied experience, how can we create a sensual past in the present, and what do we consider within that act? A consideration of sense is key to the work of Heuson. In her essay, *On Hearing Together Critically: Making Aural Politics Sensible Through Art and Ethnography*, (2015a) Heuson writes about a “politics of sensing through the productions of aurality”. Through six summers of fieldwork and practice-based research and art, she explored tourist venues utilizing history, heritage, and myth in the Black Hills of South Dakota, and traced how aural experiences are used to “sell American heritage” in presenting a constructed past. (Heuson, 2015a, pp. 74-75) Aural modes of production are subtle, yet powerful, and so an excellent means for managing experiences of the past. (2015a, p. 73) Aurality considers that embodiment of the past in the present; considers the experience a sensual one, and therefore a personal one, and still yet a passive one if merely heard and not listened to. She calls for a responsibility in this, an acknowledgement of the power of choice in giving voice to the past, a heritage to a sound. **What is the artist’s role in the archive and with sounding the past, and how can that strengthen a critical practice? How can these questions lead to a critical aurality, and a critical sound design?**

> As if now worn out, the century of cinema, television, photography and audio records relinquishes control to less tangible sensations of a new time. But this sudden growth suggests that the phenomenon of sound in itself, distinct from music and speech, has been neglected in the past (…) sound — and by sound I mean the entire continuum of the audible and inaudible spectrum, including silence, noise, quiet, implicit and imagined sound — can be identified as a sub-text, a hidden if uncertain history within otherwise silent media. (Toop, 2010, p. XIII)

"Distinct from music and speech," articulates an important clarification to this research, in consideration of both soundscape as well as sound design. In comparison to voice studies and musicology, and their related fields, there has been a drought in sound studies dealing with the other elements of our sonic environments. Similarly, within the relatively small amount of text I've found devoted to cinematic sound design, often there is precedence towards voice-over and musical elements in the soundtrack. But just as visual studies can allow an adaptation of work under its umbrella towards a critical aurality here, so then can some research in voice studies and musicology. The international symposium *Musique et écologies du son: Projets théoriques et pratiques pour une écoute du monde/Music and ecologies of sound: Theoretical and practical projects for a listening of the world*, was held at Université Paris 8, in 2013. I was fortunate to attend and present a paper there, the first presentation of the earliest form of this thesis. This international symposium was of great significance to many areas in sound studies and in the following three years four volumes of proceedings have been published with essays from top thinkers in the fields, (Solomos et al, 2016) the last and latest with which I wrote a review of for the annual scientific publication *Soundscape: The Journal of Acoustic Ecology,*[40] an integral source from The World Forum for Acoustic Ecology,[41] and the journal that first published my earliest work on this research as well.

Interconnectivity and an urge against dualism are a continual theme throughout the proceedings and is an important contemporary perspective in consideration of ecology. From thought on nature and culture, to urban and rural, to music and noise; what is desirable and undesirable in and from sound, what is individual and what is social in our relationship to sound, conservation and preservation, phonography and phenomenology, landscape and soundscape and the human and non-human within them. The tension between these and related categories-and what can be found and discussed between them, or what can be found and discussed if we do away with them, or what can be found and discussed if we

[40] Colbert, Maile. 2017. "Musique et écologies du son Propositions théoriques pour une écoute du monde / Music and ecologies of sound Theoretical Projects for a Listening of the World, Reviewed by Maile Colbert". *Soundscape: The Journal for Acoustic Ecology, Volume 16: Sounds Emergent: Diverse Ecologies Part II.* p. 35: https://www.wfae.net/uploads/5/9/8/4/59849633/soundscape_vol16.pdf

[41] The World Forum for Acoustic Ecology was founded in 1993 as a multidisciplinary international association studying the social, aesthetic, cultural, and ecological aspects of the world's soundscapes: http://wfae.net/

interconnect them-forges towards theories and methodologies on sound-music ecologies and ecophilosophy.[42] As researcher Ljubica Ilic writes in the publication, in her essay "Between Retreat and Return: Rethinking the Sonic Pastoral": "We are, globally, faced with the fact that the environment is one whole (…) The symbolic mesh that we live in, intertwined in all possible manners, requires more subtle choices, even when sound is in question." (Ilic, 2016, p. 256)

The environment considered as a whole, or a complex and interconnected rhizome. "Every sound is evidence of a particular, earthly vitality, and the provenance and impact of these vitalities is of course the business of sound ecology," (Nelson, 2016, p. 209) reads a key statement from the text "But Does the World Listen? Some Thoughts on Rhythmic Bonding Between Humans and the Sounding World", from author Peter Nelson. The essays in the book consider in various ways, from various angles, the embodied information gained from the sound of place connecting the listener to their surroundings, such as the text from Makis Solomos and Frédérick Duhautpas that considers sound and music's ability to allow us the experience of place, and this ability allowing the "capacity to create links, connections, and bonds," taking as example the works and writing of Hildegard Westerkamp. (2016, p. 75) Jordan Lacey calls for an ecophilosophy towards sound studies, encouraging us to consider the impact of a soundscape with imagination to provide a "sense of the subjective in the natural, which interrelates with the mental space of the listener". (Lacey, 2016, p. 149) As Guattari states, ecosophy is concerned with the whole of subjectivity. (2008, p. 2)

Soundscape ecology focuses on the relationship between living beings and their environment through sound, and so this relationship is of course inclusive to music and sonic designs and interconnected with really any sonic studies one might consider. Frans Mossberg, points out in the section "Fragmentation of the Field" in his wonderfully comprehensive, "Soundscape, Noise, and Music in Interdisciplinary. Research and Design": "The complexity of exposure to sound in today's life and urban environment calls for interdisciplinary approaches that encompass technical,

[42] Guattari, F. 1989. *Trois ecologies.* Paris: Editions Galilée. Guattari defines *ecophilosophy* (also referred to as *ecosophy*) as a philosophy towards an ecological harmony, highlighting a need for discourse to be embedded in an understanding of the interconnectedness of social and environmental.

medical, psychological, and cultural disciplines to get an understanding of the effects of sound on the multitude of levels involved." (Mossberg, 2008, p. 184) Ecology is, by definition, a large register of inters: interconnected, interactive, interdependence, interdisciplinary. The *inter* attempts to sense a whole in seeing part of the whole and its connection to other parts of the whole. These connections can help us create definitions; these definitions can create new shoots from the rhizome. As the authors describe in their introduction:

> Félix Guattari designates three ecologies: environmental, social and mental. What then are the links between music or sound and the environment (or nature), society and subjectivity? More generally, what are the links between music-sound and the world? Studying these links will help us define the boundaries of a flourishing artistic field. (Solomos et al, 2016, pp. 5)

Links inter-acting. My own practice, and the practical works explored in this thesis, can be described as interdisciplinary. Cinema, at its core, its conception, its nature, is interdisciplinary: image, sound, motion, and time. The over fifty-year history and scientific contributions of R. Murray Schafer and the World Soundscape Project, which I will go further into in the next section, is interdisciplinary from its beginnings in the fields of music composition and communication, leading to acoustic ecology and sound art, as well as sound recording towards an archive of preserved soundmarks, dying sound and sound environments. Schafer wrote, "Once a Soundmark has been identified, it deserves to be protected, for soundmarks make the acoustic life of a community unique." (Schafer, 1977, p. 101) Projects involving phonographic recordings, initially of Vancouver, then later of Canada, then five European Villages, and eventually through global tours and chapters, affiliates, and independent members. The outcomes of which are a massive, digitized library, increasingly important as the dying out of soundscapes, sound signals, [43] soundmarks, [44] and sound makers accelerates, as well as albums of composed soundscape recordings.

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[43] Schafer, R. Murray (1993). *The Soundscape: Our Sonic Environment and the Tuning of the World.* Inner Traditions/Bear & Co. (p. 10). Sound signals are foreground sounds, which are listened to consciously

[44] Ibid. Related to the term *landmark*, a soundmark is a sound which is unique to an area.

I. 3. Soundscape

Soundscape will be an integral and reoccurring term throughout this thesis. I will give a history to the term as defined in the field of soundscape ecology, but it is also important and relevant to mention that *soundscape* is a term often used to describe the sonic elements in a film soundtrack aside from voice and music. What the two uses of the term share in definition is a combination of sounds that forms or arises from an immersive environment of controlled and uncontrolled sounds. Controlled and designed sounds can create the sensation of experiencing an uncontrolled acoustic environment, or recorded sounds from an uncontrolled acoustic environment can be used to design and compose a controlled acoustic environment,[45] these examples showing a continuum between the two soundscape definitions. This beautifully fits together for this research, as the most basic definition of soundscape is the auditory environment surrounding a listener, and so in context this could include the experience of presentation of designed sound. Jordan Lacey suggests the term *affective sonic ecologies*, rather than soundscape ecology, citing problems with the field, which we will explore further on. He states the concept of affective sonic ecologies "privileges the immediate presence of sound *as it is* rather than *as it should be*," (Lacey, 2016, p. 33) focusing more on bodily affect and how that can be augmented, rather than aesthetically judged. It's persuasive and something to consider, but for this thesis we will continue with the term soundscape,[46] both for the noted connection to sound design, but as well for the reference to its visual counterpart, landscape.

I.3.a. Acoustic ecology and soundscape ecology

Soundscape ecology is a unique field in its interdisciplinary nature and beginnings, between scientists, sociologists, anthropologists, and artists. Mentioned before, R. Murray Schafer, the Canadian composer, environmentalist, educator, and author, is often given credit for having coined the phrase "soundscape" at Simon

[45] LaBelle, B. (2006). *Background Noise: Perspectives on Sound Art*. Continuum International Publishing Group. pp. 198-214. ISBN 978-0-8264-1845-6

[46] I will also note that Lacey as well argues for ongoing simultaneous use of the term "soundscape", in the pragmatic sense that it has political currency with its use.

Fraser University in the 1960's, where he began to teach soundscape studies.[47] The phrase is used to describe the component of our acoustic environment that is perceived by humans, or "how that environment is understood by those living in it". (Truax, 1984, p. 11)

> It devolves on us now to invent a subject we might call acoustic design, an interdiscipline in which musicians, acousticians, psychologists, sociologists, and others would study the world soundscape together in order to make intelligent recommendations for its improvement. (Schafer, 1977, p. 4)

Ecology deals with the relationship of organisms to their surroundings. This relationship is often clearly addressed in regard to place, but the relationship is highlighted when one also considers change, thus considers time. Acoustic ecology and soundscape ecology have branched out to give birth to a movement in sound art called phonography, a neologism referring to the art of field recording. This has also shown a sonic spotlight upon our changing environment and has become an important tool in bioacoustics and biomusicology, which help us to understand what these changes can mean. For example, we know birds communicate mainly with sound. What we have found is that when their calls cannot be heard within a soundscape dense with what we might refer to as noise pollution, their reproduction decreases.[48] Scientists are working with acoustic ecologists and sound recordists to sonically capture and study environments in which this is happening. These recordings often find themselves into semi-public spaces, such as archives and libraries, and with many of these libraries migrating to digital and virtual spaces, accessibility has grown, and with that as well the field of audio works and design that utilizes the sounds from our world.[49] Some of these birdcalls may someday only survive on these recordings, a disembodied voice ungrounded from original context, from original

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[47] The actual origin is disputed, and Schafer in a 2013 interview said himself that a city planner named Michael Southworth for a paper, "The Sonic Environment of Cities", 1969, first used the term. It is likely it was used even before this.

[48] There is a large amount of research and study on this, a useful review is Catherine P. Ortega's chapter "Effects of Noise Pollution on Birds: A Brief Review of Our Knowledge." (2012) *Ornithological Monographs No. 74*. BioOne: https://doi.org/10.1525/om.2012.74.1.6

[49] A prime example, and one that is used and sited further in the text, is The Cornell Lab of Ornithology, Macaulay Library, which can be accessed online here: http://www.birds.cornell.edu/page.aspx?pid=1676

meaning, until once again finding a home within a work embodied with new meaning, or find affect within the disembodiment. Thus, in one path, a recording could cross through many disciplines, pull the time of its recording into the present of its being experienced, and fill that present with elements of its path, elements that could be useful to those future artists and ecologists alike.

1.3.b. Sound ecologies and ethnographies

> It is not only species that are becoming extinct but also the words, phrases, and gestures of human solidarity. (Guattari, 2008, p. 29)

Sounds and soundscapes are becoming extinct as well. We don't tend to consider silence as active or activity, but a lull, a pause, a calm within the storm. And storms are catastrophes, and often we associate catastrophes with sudden and massive. We give "animalistic" descriptions to the sounds made by what we call natural disasters, such as growling tornado, roaring avalanche, shrieking cyclone, groaning earth. This practice speaks to our complex relationship with nature, connecting us to it and taking us out of it at the same time. But what of the slow silencing that happens to our soundscapes when certain species die out? Such quiet disasters affect everything, sadly in ways we don't (and won't) notice until too late.

In the book, *The Great Animal Orchestra: Finding the Origins of Music in the World's Wild Places,* (2012) author, musician, soundscape recordist, bio-acoustician and naturalist Bernie Krause coins the term, biophony, to help ecologists, biologists, acoustic scientists, and others to understand the long-term impact of disasters, particularly silent ones. Biophony refers to the collective sound vocal non-human animals create in each given environment. (Krause, 2012, pp. 68-69, p. 82) We face many compounding problems with the silencing of certain species and the quieting of a whole biophony, not the least of which is our connection with the world.

Krause provides some powerful examples of silenced biophonies in his book, such as the story of the Wy-am tribe in the Northwestern United States, whose history has been intertwined with the Celilo Falls, a waterfall just west of the Columbia River's midway point, for thousands of years. Wy-am means "the echo of falling water." Krause writes: "so central were the falls to the tribe that the Celilo was

considered a sacred voice through which divine messages were conveyed." (Krause, 2012, pp. 40-41) It was also their yearly source for fish. In 1957, when the Dalles Dam gates were ordered shut by the U.S. Army Corps of Engineers, the waterfall and fishing site were completely submerged, sending the Wy-am into a state of mourning that continued to subsequent generations. Krause cites several similar "silencings" in his book using spectrographs[50] to give form and shape to "silent" disasters. A particularly sad example of this sonic loss is the recorded comparisons through time of the coral reef in Vanua Levu, Fiji, that has been devastated by warming waters, shifts in pH, and pollution. (Krause, 2012, pp. 72-74)

< Figure 1 >

Krause also recorded twice at the Lincoln Meadow "forest management area" in the Sierra Nevada Mountain Range, once before mass logging went into effect, and once after, a year later on the same date, time, and same weather conditions. Lincoln Meadow was to be an experiment in "low-impact" logging, involving individual tree clearing peppered throughout a forest area, rather than full clear-cutting. Along with the recordings, photography was taken. We can see from the spectrographs that, while visually it seemed that little had changed, aurally it was a different story. (2012, pp. 68-74)

< Figure 2 >

"Even the surrounding hills were hushed, as if brought low by language*"* *s*peaks *Grendel* (1971) in John Gardner's novel telling *Beowulf*'s (Anonymous author, disputed date: c. 700-1000 AD) story from his side, that of the "monster", exploring the necessity of the other side, and that opposites need each other to define their existence as opposites. There is battle, but also an implied balance within the war these opposing forces and their battles make up. Opposites are active; they push and pull at each other, creating oscillation and vibration. "…one must acknowledge a surrounding environment of sound or language in order to recognize silence. Not only

[50] An instrument that obtains a sound spectrum by analyzing a complex sound into its component elements, it allows a visual analysis of sound into its frequency components, as defined by the Merriam-Webster Dictionary.

does silence exist in a world full of speech and other sounds, but any given silence takes its identity as a stretch of time being perforated by sound." (Sontag, 1969, p. IV)

There exists a sculpture that elegantly and visually embodies this consideration. Its creator, Kadet Kuhne, is an artist whose use of different mediums and technology allows for experimentation in a diverse array of forms, which is clearly seen within her oeuvre. One has the sense that her initial dreams and concepts are never attached or weighted by a set structure or know-how, but rather she finds and forms the best path to them, fearless of unknown territories or technologies. This feels especially apparent within her recent *Interference* series (2013-14), which includes 3D printed sculptures based on the architecture of sound waves, specifically the phenomenon of destructive interference and how it relates to the audio waveform. When two simple sound waves share the same frequency are produced simultaneously while holding opposites of phase that coincide with one another in an exact counterbalance, the alternating pressure disturbances of both waves cancel one another, producing an amplitude vibration of zero–which we can consider, silence. (Holland, 1997)

> The waveforms of spoken words are phase shifted, or inverted, to create cancellation, rendering the perceived sound silent. This cancellation brings into consideration the transitory and subjective nature of thought and aims to question the solidity of language. (Kuhne, 2015)

In *Dependent Origination* (2014), the sculpture is a printed sound wave of the title being spoken, whose meaning is also an ongoing theme within some of Kunhe's other works. Dependent Origination is a core Buddhist teaching that speaks to the interconnectivity of all things. There are no beings or phenomena that can exist independently of other beings and phenomena, and they are caused to exist because of other beings and phenomena, which may also cause them to cease, in a perpetual rise and fall that if mapped may even look something like a complex sound wave rendered visual. Kuhne not only renders sound visible, renders silence visible, but freezes a voice in space and time, in volume and silence. Her sculpture is a time capsule and an archive, a sound and an object. It creates place by placing a visible silence, and surrounding it like parenthesis, transposing it from a time-based media into a sculpture.

< Figure 3 >

Jennifer Heuson, when writing about the silence of the representations of indigenous people in the American Southwest museums, calls for a more artistic approach to ethnography, arguing for anthropologists to grapple with the sensorial representations and politics of their practices. She asks them to ask themselves in their practice "how to make the past sensible to the present". (Heuson, 2015a, p. 73) How can we share sense across times, places, and peoples, towards a shared understanding. "Sound in its varied forms works to forge common sentiments." (Heuson, 2015a, p. 76) The power of aurality is its description of the process of mediating and making sound, silence, noise, and linking this to emotional affect. (Heuson, 2015a, p. 77)

Her initial approach considered sound as something that could be quantified and contained, then documented and offered as evidence. I can relate to this assumption, having approached my work in a similar way, initially trying to approach as "science", rather than "art". In working with methods from soundscape studies and sound ethnographies, it was inadequate. When Heuson also approached tourism as post-colonial, and approach that has been important in contemporary assessment of representations and narratives of the past in archives, this helped to form critical aural culture assessments. The tourism industry (re)produced "stark contrasts between the natural and cultural world, and between Native and non-Native peoples". (Heuson, 2015b, p. 93) She considers these productions in heritage and tourism venues forms of "frontier aurality", and what is called for is a counter-aurality to them. (2015b, p. 31)

The Wayback Sound Machine as well needed to go beyond soundscape studies and sound ethnographies, though each of those fields is important to this interdisciplinary work. It needed as a thesis to highlight and discuss writing and works that explored these disciplines' overlaps with sound art and design, and as a conceptual tool in art practice, explore and study those same overlaps, and how sound in artwork allows complex information to be sensible. Art studies allows for the complication and complexity to be an important part of knowledge. And the base for all of this, is listening.

I. 4. Soundscape →listening

> …hearing has evolved as our alarm system — it operates out of line of sight and works even while you are asleep. And because there is no place in the universe that is totally silent, your auditory system has evolved a complex and automatic "volume control," fine-tuned by development and experience, to keep most sounds off your cognitive radar unless they might be of use as a signal that something dangerous or wonderful is somewhere within the kilometer or so that your ears can detect. This is where attention kicks in.[51] (Horowitz, 2012, para. 5)

There was a point of time in the wild, as the wild was becoming less wild, when listening became not as much an act towards survival and began to lean towards the aesthetic and recreational…or (re)creational. "Re", that timely prefix connoting movement through time–again, back, repeat. Much of this (re)search is about (re)presentation: a disruption of a history, a transposition, a compelling heterogeneous meshing of contexts–recordings and art–preservation, presentation, and perception. An important (re)occurring point will (re)peat throughout this thesis…when we listen to recorded sound, at what point, or points are we sonically perceiving? Also, important will be to consider: why is that important?

I.4.a. Listening and Deep Listening: A phenomenology of listening: to time, space, and place

> Walk so silently that the bottoms of your feet become ears. (Oliveros, 1974)

I feel it is important to address the experience of listening as also separate from sound perception. Listening is developed, and so also adds a layer of complexity and subjectivity to sound perception. For example, when we perceive a recorded sound, we may have a learned ear towards placing the sound of the recording material into the past. Listening skills are contextually variable. This is again why studies of sound ethnographies can be important to consider.

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[51] Seth S. Horowitz was an auditory neuroscientist at Brown University and the author of *The Universal Sense: How Hearing Shapes the Mind*. 2012. London: Bloomsbury. This quote is from his article: "The Science and Art of Listening." *The New York Times*. Retrieved August 7, 2015: http://www.nytimes.com/2012/11/11/opinion/sunday/why-listening-is-so-much-more-than-hearing.html

In the section titled, “How Pantagruel, being at sea, heard various unfrozen words,” from *The Fourth Book of Pantagruel* (1552) of François Rabelais’ *Gargantua and Pantagruel,* (1530-1564), the giant, Pantagruel, and his crew are on a sea voyage. Pantagruel stops their talking and asks them to listen, thinking he is hearing “some people talking in the air”. They stop and, “…with full ears sucked in the air as some of you suck oysters, to find if we could hear some sound scattered through the sky”. (Rabelais, 1552, p. 1704) They were frightened, as they could hear but not see, voices of men, women, children, horses, and weapons. His crew becomes terrified, fearing they are under siege and outnumbered. Pantagruel begs calm and to see whom they are first, saying,

> I have read that a philosopher named Petron was of opinion that there were several worlds that touched each other in an equilateral triangle; in whose centre, he said, was the dwelling of truth; and that the words, ideas, copies, and images of all things past and to come resided there; round which was the age; and that with success of time part of them used to fall on mankind like rheums and mildews. (…) Aristotle affirms Homer's words to be flying, moving, and consequently animated. Besides, Antiphanes said that Plato's philosophy was like words which, being spoken in some country during a hard winter, are immediately congealed, frozen up, and not heard; for what Plato taught young lads could hardly be understood by them when they were grown old. Now, continued he, we should philosophize and search whether this be not the place where those words are thawed. (Rabelais, 1552, chap. LV, p. 1707)

The skipper alerts them that they are on the Frozen Sea, on which was a grand battle had happened during the winter. Now with the Spring’s thaw, the frozen sounds “melt and are heard”. (1552, chap LVI, p. 1710) With this in mind, they look around for some not yet thawed, in order to see the sounds. They find some on deck, described as like, “…rough sugar-plums, of many colours”, (p. 1710) and describes the different colors and their relation to the emotion behind the words–some merry and “gules”, some fair and “or”. They picked up the sounds and warmed them in their hands, at which point they were able to hear them once they melted. “…he threw three or four handfuls of them on the deck; among which I perceived some very sharp words, and some bloody words, which the pilot said used sometimes to go back and

recoil to the place whence they came, but it was with a slit weasand. We also saw some terrible words, and some others not very pleasant to the eye." (Rabelais, 1552, p. 1711) The words begin to melt in larger numbers, and a phonic re-enactment of the battle is described. The recorder writes he would have liked to keep some, persevered in oil, but Pantagruel tells him it's wrong to "hoard up what we are never like to want or have always at hand." (Rabelais, 1552, p. 1712)

Is this an early account of the desire to preserve sound? Or to freeze time? Are the two related? As Michel Chion points out on this passage, this could be the desire to preserve, but that preservation is delaying the time first heard, there is no ability to repeat the frozen sounds. (Chion, 2016, pp. 21-30) We perceive the property of time in sound after it has been listened to, so the act of preserving a sound is in that manner preserving its time, whether repeatable or not. And while we listen, we perceive sound's other properties–such as timbre–at the same time as…time! The time we listen to is always in the past, and the experience is always in the present, simultaneously. Recorded and preserved sound extends and highlights this phenomenon. Perhaps the Rabelais story isn't so much about recording, but about listening to sounds from the past. Preservation → presentation → perception.

> What comes together through sound is emergent and passing time — a sense of duration, the field of memory, a fullness of space that lies beyond touch and out of sight, hidden from vision. Sound must be trusted, cannot be trusted, so has power. (Toop, 2010, p. XV)

My first writing on the concept of sound/sounding time led to the article "Wayback Sound Machine, Sound Through time, Space, and Place", published in the World Forum for Acoustic Ecology's *Soundscape, the Journal of Acoustic Ecology* in 2014. The article was a beginning, but also a wandering from my background in the artworld, as I focused more at the time on acoustic ecology and soundscape ecology researchers. These fields did, however, develop with a relationship to art and music, and these parallel paths have conjoined in this project. One of Schafer's team members in developing the acoustic ecology field, Barry Truax, focused his work through the term soundscape ecology, studying the effects of the sonic environment on all organisms sharing it. Truax is also an electroacoustic music composer, as is another well-known member of this pioneering group, Hildegard Westerkamp, whose

phonographic recordings and sound work has also been used notably in cinematic sound design. Given an opportunity to interview Westerkamp, after asking her to explain what she created, I followed up with the open question, "What can that say?" Her response was…

> Everything I do seems to be focused on understanding the world through the act of listening and on the desire to share this understanding with as many people as possible. I believe that every sense perception gives us valuable and important connectedness to and information about the world in which we live. Our hearing sense has been underutilized (certainly in my lifetime, in our societies, nowadays) and a re-balancing of our senses may mean a re-balancing of how we approach life, environment, culture, politics and ideas. Experience in listening and composing has shown me ever new, changing and deepening approaches to space and time.[52]

Anthropologist Steve Feld was inspired by the theories and methodologies of Schafer to apply towards an anthropology of sound, focusing on the idea that the creative interpretation and presentation of sonic fieldwork is an important path of both intellectual exploration, as well as a public engagement. In David Novak and Matt Sakakeeny's invaluable book *keywords in sound*, (2015) Feld defined the term "acoustemology", conjoining "acoustic" and "epistemology" to describe sound as a way of knowing and being in the world. (2015, p. 12) His work calls for a sensuous relationship and investigation with place, a call integral to the research within this project, and one shared with other researchers that cross anthropology with art and philosophy, such as David Abram and his book *The Spell of the Sensuous: Perception and Language in a More-than-human World*, (1997) where in part he considers our relationship with the soundscape as a communicative experience that led to language– an investigative thread also researched by soundscape ecologist, musician, and author Dr. Bernie Krause in the development of his Acoustic Niche Hypothesis, which I will explain further in the next section.

[52] Colbert, M. 2011. Interview with Hildegard Westerkamp in, "Within a Grain of Sand: Our Sonic Environment and Some of Its Shapers" in *Sounding Out: the Sound Studies Journal*. NY: SUNY Binghamton

Where the research and bibliography found initial gaps in the thread between soundscape and sound design, the relationship of sound design with affect theory has been fundamental. Other literature supporting and expanding that bridge in phenomenology and sound is the iconic work of Don Ihde on phenomenology of listening, (2007, p. 147) as well as Jean Luc Nancy, who speak of the relationship of sound with beings–by its physics, nature and other characteristic–as a *touch*–more than a simple vibration, but a communication. He describes how we stretch and strain to hear, the act of listening expanding in a bodily way, while the body stays, straining to bring sound inwards. (Nancy, 2007, p. 5) Timbre, the perceived tone and texture of the sound where information bearing elements reside in overtones, frequency envelopes, and temporal characteristics, conveying information and affect of the sounding object or body. "Resonance is at once listening to timbre and the timbre of listening." (p. 40) An "echo of the subject." (p. 39) The listener, "…resounds, responding to a momentum, a summons, a convocation of sense." (p. 30) Listening is fundamentally embodying an act that connects through resonance the external soundscape, be it a dawn chorus or song or soundtrack, and our bodies. (Andrisani & Droumeva, 2016).

I.4.b. The Biophony and IBEs

There is a constant challenge within the world, a challenge of being heard. It is about survival and communication, attraction and distraction. The Biophony describes the acoustic bandwidth partitioning process that vocalizing animals collectively create in still-wild biomes, by which non-human organisms adjust their vocalizations by frequency and time-shifting to compensate for occupied vocal territory.[53] (Krause, 2012, pp. 68-69) Thus each species evolves to establish and maintain its own acoustic bandwidth so that its voice is not masked. In *The Great Animal Orchestra*, (2012) Krause goes further into how listening to the biophony, and sounding in the biophony, could be the basis for human's sense of composition, listening to the biome, listening to these soundscapes. (2012, pp. 104-105, pp. 212-124)

[53] Biome is defined by Merriam-Webster as a major ecological community type (such as tropical rain forest, grassland, or desert), a community of distinctive plants and animals living together in a particular climate and physical environment.

Biologically important sounds can be described as holding information-bearing elements (IBE) within them, as studied by neural researcher Nobuo Suga, who worked specifically with bats and how they listen–and how they are listened to–within a shared soundscape. (Suga, 1992) Perhaps I take liberties with such a useful term by applying it to the Humanities, but it could be theorized that responses to complex sounds and soundscapes, and so as well cinematic sound design, could be explained in part based on these IBEs. Remembering O'Callaghan; an "awareness of environmental things and happenings thanks to audition is epistemically mediated by awareness as of sounds and auditory objects but does not itself constitute auditory perceptual awareness as of those things and happenings." (O'Callaghan, 2011a, p. 378) Most IBEs are generic acoustic patterns and sound elements, (Suga, 1992) deceptively simple, and often even shared across species, for example signaling danger, or communicating with one's dog, and other acoustic biosemiotic sound happenings. This research will further consider how the affect of listening, and IBEs in what we are listening to, is used towards a designed experience; and the relationship between that design and our soundscapes, and this further into consideration of time and place.

The consideration of IBEs allows a mereological view of sound perception, relating and perceiving the parts to the whole they create, which brings us back to theories from O'Callaghan, who again asks for the consideration of a sound to be an event, and that relationship between source and sound as one part to a whole. Parts towards wholes are important to time-based media, and the perceptual illusion that fills in and allows the whole: screens, frames, fields, pulses, and vibrations. Parts are important to a fuller perception of the world, creating a soundtrack to an event; woven with the visual profile of the same event–it is one event we are sensing. Rather than cause and effect, the relationship of part to whole may allow us to sense the whole. (Bermúdez, 2000, p. 10) And this whole includes time.

I.4.c. Introduction Conclusion, the path

What can we gather from sounding the past, and within that, what is the relationship between soundscape and sound design? If the study of acoustics is about sound in relation to *space*, and the study of sound ethnographies and ecologies

is in relation to *place*, and the study of sound in affect and phenomenology adds *time,* a soundscape ecophilosophy in relation to sound design can interconnect the whole. To consider sound and audition, we are also considering time. This is where considering philosophical theories of sound perception is useful, though limited in that most were lifted from theories of visual perception. In general, more contemporary theories that acknowledge and consider sensory perception as a system in which our senses aren't so compartmentalized, but more like a net or network, or matrix, of sensing and processing, are more useful towards accepting the complexity of the thesis questions. But a history of existing theories was given, and how they may apply. These will be reflected upon as well, further on.[54]

To sum up points from the introduction chapter, and bridge to Chapter 2, the Wayback Sound Machine is a concept, a theory, and a virtual tool for creation, investigation, and use of sound from the past. The principles explored in this project, with research and thought, as well as the art project case-studies that utilize the conceptual tool, form and test its theory. Researchers and investigators, such as those working within disciplines such as soundscape ecology or sound ethnography, can also consider this theory when considering an aurality critically. Part of the theory explores the relationship to memory and emotion that audition plays, and we can also consider the biological and historic relationship to listening to our soundscapes for survival. As a concept and a tool (as in art concepts are often tools), when considering designing sound of/for the past, artists and designers can make affective use of these relationships. The way we process sound, from what we understand, allows an infinite complex of information to be sensed and sorted, in collaboration with our other senses. Listening to our sonic surroundings, or sonic surroundings designed for an artwork or cinema, is a source of knowledge, of complex, sensory information. Sound Studies is an umbrella term for many different disciplines that are considering this. Listening can be a form of scrying, the act of detecting a message or vision, with

[54] We can recall this paragraph stated in page 14-15 of the thesis Introduction: *A philosophy of the perception of sound can reach towards a further insight to "nature, objects, contents, and varieties of perception", when considering their spatial, causal, and temporal qualities. This thesis will also make the case for the act of listening to be included within a sound philosophy: to think about giving one's attention to a sound–a decisive action–and highlight that under the more general definition of hearing: the faculty to perceive sounds.*

the possibility of information of another time and place. There are threads of thought and work in these different fields of considering sound from/for the past, but rarely have they come together in a coherent path. This is in part what I am attempting with this investigation, and with asking: **What can we gather from sounding the past, and within that what is the relationship between soundscape and sound design?** This investigation and research will help map that path.

I will explore this question with my own case-study artwork, but as well with asking this question towards the artwork of others. Most of the work written about gathers and employs sounds from the past and/or sounding the past in the creation of creative soundscapes in cinema and artwork, some are examples of specific terms and techniques I write about in this thesis, a few are examples of where I feel an application of the Wayback Sound Machine in production would have served the work well. A driving impetus to this work moving from an art practice to an art studies research project and thesis was working with the Wayback Sound Machine as a tool of sound study and theory, towards sonic philosophy. I use my concepts, questions, and the schema to analyze and critique the sonic aspects of the work written about in the next chapters. I also further explore the relationship of listening to our soundscapes, paying attention to what we listening to and asking what we listen for, and creative sound design, where we apply that thought to expressive and sensible cinematic soundscape design.

Chapter II: Soundscape →listening → composing and compiling

The Wayback Sound Machine studies recording as preservation, recorded sources as representation, their usage as presentation and (re)presentation, and affect in perception. To recapitulate points from the introduction chapter, and bridge to Chapter 2, I stated the Wayback Sound Machine is a concept, a theory, and a virtual tool for creation, investigation, and use of sound from the past. I wrote that the way we process sound, from what we understand, allows an infinite complex of information to be sensed and sorted, in collaboration with our other senses. When we are considering designing sound of/for the past for creative work, we can make affective use of this process, just as researchers and investigators, such as those working within disciplines such as soundscape ecology or sound ethnography, can also consider this when considering an aurality critically. Counter-auralities can be created and explored, where "tactics to dismantle the visual," (and here, aural) "strategies of the hegemonic system," (Mirzoeff, 2011, p. 24) are employed, reconfiguring aurality. **What can we gather from sounding the past, and within that what is the relationship between soundscape and sound design?**

An interesting, and here integral, challenge to sound perception and time is to consider the act and object of recording sound. Already the act of recording includes within it the act of composition. A choice is made to frame a soundscape; pressing record at a moment, aiming a microphone that was chosen for the frame it captures– shotgun, cardioid, omni, binaural, surround [55] –deciding upon a measure of time, and pressing stop on the recording. Wherever this recorded sound goes, however it is used in its hypothetical future, it already carries with it information about its time and

[55] Different microphones have different "polar patterns", essentially where the mic will pick up sound, and where sound will be "blocked" spatially. A cardioid will capture what is in front of the mic, and mostly block out sound from the back, allowing one to "point" the microphone at the desired sound source for capture. These are the most usual microphones chosen, primarily for control…the allowance to block out "unwanted sound", or "noise". This is a good example of the subjectivity and composition choices that are made even in the pre-production of sound collection. A hyper-cardioid or shotgun mic are often what you will find in a film production, to concentrate the recording pick-up on the human voice, blocking out the other sonic environmental elements. Omnidirectional, binaural, and surround array microphones will be mentioned throughout the thesis as choices for attempting to get a fuller soundscape when recording.

place, as well as the subjective and creative decisions of its recordist. Recording can be in a sense an act of preservation, but simultaneously an act of creation within the recording choices of the recordist, including the choice of which recording material and devices to use; with all of this, something new is quite literally created. Recordings are not a window into the time and place of whence they are from, they are something created in the act, new. Recordings may become sources for something; become representation, their usage a presentation of that past, more of a stage than a window. The affect that has on the future listeners brings us again to perception. To consider sound and listening, and sound recording and compiling, is to consider the perception of time itself.

II. 1. Future Memory: Listening and the Wombscape

There are passages during this dissertation where I will be writing in a more personal or essay tone. I feel this is this is very much in-line with this project. The original moment of the project's concept came as an internal question, provoked by the sounds of the environment around me. This internal question became a concept. The concept became an art project. The art project explored the personal past with the historical past. The concept branched to other art projects, which continued in this vein; if not with my own personal past, than with the personal pasts of others–oral histories told as stories, accounts of feelings on events, found home movies in forgotten archives. The questions and concepts developed with these projects into a theory that this thesis is exploring; and when I ask, *what can we gather from sounding the past?* I am as well asking about personal pasts, as there is another sort of information to be found there, even about collective pasts, one our usual forms of history often ignore. The personal pasts speak to sensible pasts, where recollection is conjured through sense.

I was a child obsessed with time travel. I perpetually daydreamed of the ability to pause, reverse, and fast-forward my life. I had a book on the "olden days", and it was amazing to me that my great-grandparents, whom I had the fortune to know, had lived them. I wanted to fast forward and see myself *their* current age, telling stories to the next generations of their past. Now, decades later, my own sense of their time is

wrapped up in my sense of my time then–in part frozen with their passing. The wistful frame to a door closed, only bridged with memory. Memory provoked by our senses can hold a more immersive experience.

I used to entertain the thought that if I let my breath go and sunk to the bottom of a body of water, I actually could pause time, or at least slow it down, as the sound of the fluid world around me seemed to suggest. Whenever my family moved location, which was often, I made a time capsule to bury. And I always scan the ocean for a message in a bottle, long lost upon the waves. A lifespan of scrying, through place and time.[56] These were in a way the beginnings of my future in time-based media–both image and sound–my love for found footage and media archives, and my research and writing on sound back in time. My first film, *Butterflyweed,* (1999) was created on the concept of trying to describe a feeling, "felt at the age of seven, reoccurring, I have not found the words to since describe." [57] To sense describe; words had not been enough. This was also my first cinematic sound design, as I found myself shaping and working with audio captured by the camera towards what I felt like the scene should sound like, to provoke a feeling woven with the visuals. In some way, I have been working on this project since the beginning of my career.

More recent work in the *Wayback Sound Machine* project, *Passageira em casa*–and the related *Passageira australis*–used my personal family archives, 8mm and Super 8 film my Great Grandfather shot in Hawaii, where my family had been for generations. Some of the films go back to the 30's. I don't know what they sound like, or what the place they capture sounded like. I searched sound archives, such as from the Bishop Museum and Macaulay Library, to put together how the films may have sounded. Their voices are missing. The sound of the material itself is missing. A rigorous and literal approach is not working here. I consider how the films have me feeling, what they have me remembering, how those memories affect me, and I try to

[56] I continue to use the antiquated word, *scry*, as when we discuss information gathered in audition as being almost a divination, what is even more appropriate a word towards sound and sound perception is a word such as *scry* that describes the act of looking into a chosen medium for information about the future. As has been discussed in Chapter 1, and will be discussed at length further on, critical listening, recording, archives, and sound design–as a path–can have provoke a consideration of the future ecology of a place. By listening to its soundscapes' changes over time.

[57] Colbert, M. 1999. "Butterflyweed" film: https://player.vimeo.com/video/46039245

transform that into the composition, with these recordings from the past. This gets much closer, much fuller, works with the sensing body, to enter and surround.

II.1.a. Womb listening

> There was a study in which doctors gave babies only a day-old pacifiers connected to tape recorders. Depending on the pattern of the new babies' suck, the tape recorder would either switch on the sound of the mother's voice, or a stranger's. "Within 10 to 20 minutes, the babies learned to adjust their sucking rate on the pacifier to turn on their own mother's voice," says the study's coauthor William Fifer, Ph.D., an associate professor of psychiatry and pediatrics at Columbia University's College of Physicians and Surgeons. "This not only points out a newborn's innate love for his mother's voice but also a baby's unique ability to learn quickly." [58]

Allow me another auto-ethnographic moment, and I believe it will be clear why this voice–my voice–is important here. My daughter, let's call her O, knew this voice–my voice–the moment she was born. In a strange, bright, cold new world, it may have seemed the one constant she could rely upon. When she was first placed upon my chest I sang to her, and she calmed, staring at me–as much as newborn eyes would let her–with an expression of surprised recognition, as this aurally familiar voice to this visually unfamiliar face sang a familiar song, one I sang her often in the womb. One I knew by heart because my mother would sing it to me when I was young and would sing to me as well in gestation.

As early as four and a half months *in utero*, we begin to hear. The mother's voice comes to the fetus not solely as ambient sound through the abdomen, as other external sounds and voices would, but also through the vocal cords' internal vibration, through the mother's own body, vibrating the amniotic fluid towards the fetal body. David Toop describes this as "eavesdroppers in the darkness" and speaks to it as the first aural hauntology".[59] (Toop, 2010, p. IX) There is a direct connection, a shared

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[58] Maccarthy, Lara Flynn. 2012. "What Babies Learn in the Womb." *Parenting*.

[59] "Hauntology" is a concept coined by Jacques Derrida in *Spectres of Marx* (1993) to describe a temporal, historical, and ontological disjunction in which the apparent presence of being is replaced by a deferred non-origin, ghostly and out of place and time. We can imagine this for the

place. As early as the seventh month, a fetal heartbeat will slow and calm to the sound of the mother's voice, and research has shown newborns even prefer a similar version of their mother's voice to what they heard in the womb, muffled and low. When O. suffered colic in her early months, one sure way to help comfort her was to sing to her while she was on my chest. Aside from the close contact of skin, the familiar smell, the warmth, it could be that hearing my voice through the chest as a medium mimicked the womb filter. Even more likely it was all these senses in tandem, her young body feeling the vibration of my chest as I spoke, the bodily conduction of sound perhaps calling back to an ancient form of hearing when we were creatures in water. We retain these sensorial connections through time, sound can bring us back to places unreachable and past.

A new study shows the zebra finch sings to her egg songs with information to prepare it for the outside world survival, such as extreme changes in weather from the Climate Crisis. It's not an entirely newly understood phenomenon, it had been known that chickens and quails do the same to help with imprinting when the chick hatches. But this study showed the finches song would actually change growth and early behavior.[60] In the tape recorder study referenced earlier, researchers also noted that newborns would suck more intensely to recordings of people speaking in the language of their mothers, likely picking up on the melody and rhythm. We are beginning to understand that not just hearing, but learning through listening, starts in the womb. In the womb there is sound, but without a perceived cause. Walter Murch describes this lack of causality as possibly the key to how our dominant sense shifts to vision with our entry into the outside world. Our mother speaks, we see where that sound has come from, we see that sound can be a result of something and connected to something. Toop expands on this to theorize that sounds without cause have the ability to return us in part to that wombscape place, "but with the added anxiety of awareness, of knowing that sounds should have a cause". He quotes Harold Pinter, "We are faced with the immense difficulty, if not the impossibility of verifying the

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fetus…we imagine not sensing time, not connecting these early aural hauntings as connecting to a specific reference. This term is also very useful in discussing acousmatic and asynchronous sound, as well as the creative use of archival sound. I will explore this term further in relation to sound in Chapter III.4

[60] Learn, J.R. 2016. "Birds Sing to Their Eggs, and This Song Might Help Their Babies Survive Climate Change." *Smithsonian Magazine*. Retrieved November 29, 2019: https://www.smithsonianmag.com/science-nature/birds-talk-their-eggsand-song-might-help-their-babies-deal-climate-change-180960168/

past", as he states that if the sounds lack a cause, then our need is to invent one. (Toop, 2010, p. IX)

II.1.b. Listening towards learning

> Carmen Bank found her 1985 pregnancy rather boring. So, to pass the time, she started doing something she would never have dreamed of: watching a soap opera. (…) And so she spent almost every morning in front of her television set, ready for the familiar theme of "Ryan's Hope." (…) Bank isn't sure when she discovered the behavior, but, shortly after Melissa was born, Bank realized that the baby seemed to recognize the "Ryan's Hope" theme and would stop fussing when the program began.[61]

In my third trimester I was less and less mobile. Something that happens with pregnancy when preparing mentally for your new, very shared life is to think a lot about your own childhood. I was lucky to have a mostly happy one, and acute nostalgic feelings, memories, and sensations would come up often. Particularly around the television show *Dr. Who,* (1963) which in my non-mobile state I was binge watching. As a child I spent a happy hour with my father once a week watching reruns from the 1960's and 1970's, in the 1980's. *Dr. Who* (2005) returned to broadcast in the 2000's, in a few new successful regenerations. The new iteration uses a lot of the classic themes, characters, and even remixes and re-masters of the original opening score written by Ron Grainer and realized by Delia Derbyshire for the BBC Radiophonic Workshop in 1963. The *Dr. Who* theme was one of the very first signature electronic music tunes, performed well before commercial synthesizers were available. Derbyshire used *musique concrète* techniques, cutting each note individually on analogue tape, speeding up and slowing down to create the notes from audio tape recordings.[62]

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[61] Parachini, Allan. 1998. "The Very Young and Restless, Do Soaps Hook the Unborn?" *Los Angeles Times.* Retrieved November 1, 2014

[62] Grainer was famous for asking, after hearing Derbyshire's magic, "Did I write that?". Derbyshire replied, "Most of it." The BBC, who kept members of the Radiophonic Workshop anonymous, prevented Grainer from giving Derbyshire a co-composer credit and a share of the

While O. was in the womb, I watched those past decades, one after another. When I came across the soap opera study after she was born, I decided my obsessive *Who*-watching had set up a perfect laboratory to try it out myself. We started in 1963 and moved through time with the Doctor. Hearing the theme song, O. initially looked up in surprise, and her brow first furrowed in concentration, then recognition. She looked around slowly at first, then faster. She smiled; she cooed; she laughed. She started to flap her arms. When I turned the theme off, she stopped everything and looked concerned, there was a clear association. I turned it on again and we celebrated in recognition of this already-shared future-past sonic moment, one I had with my father and now with her. O. in the womb was not only hearing, but she was also learning, and beginning the act of processing listening. I define "wombscape" as the sonic environment *in utero*, and with this gentle example I am also defining it as a term to describe how characteristics and content of a sonic environment shape us with its aurality, this includes all elements of our interior soundscape, which include elements of the exterior soundscape, including its media sounds. This aural shaping continues throughout our lives, and is again why considering listening, especially listening to the past, is a complex act of external and internal influences.

II.1.c. (Re)collecting the Wombscape

> Reactive listening begins eight weeks before the ear is structurally complete at about 24 weeks. These findings indicate the complexity of hearing, lending support to the idea that receptive hearing begins with the skin and skeletal framework, skin being a multi-receptor organ integrating input from vibrations, thermo receptors, and pain receptors. This primal listening system is then amplified with vestibular and cochlear information as it becomes available. With responsive listening proven at 16 weeks,

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royalties. https://www.theguardian.com/uk/the-northerner/2013/jan/10/blogpost-delia-derbyshire-electronic-music-dr-who

hearing is clearly a major information channel operating for about 24 weeks before birth.[63]

The more we understand and realize about fetal hearing and processing sound, the more we understand how fetuses can detect subtle changes and process complex information. Memory starts to form around 30 weeks, and it's possible early sound interventions at this time could help babies with detected abnormal development. Speaking and singing to the unborn fetus, allowing them to experience different soundscapes while still in the womb, helps shape their brains.[64] This may be why the urge to do so is there. So, the connection between the soundscape, listening, and learning from listening–in conjunction with memory–is an early one. Those steps as a process, one could therefore theorize, are quite ingrained. To take information from our sonic environment; to trust information from our sonic environment.

O's very first fetal movements, called "quickening", was around 16 weeks–often the time for first movements, along the time hearing has developed. The fetus floats in a rich and complex soundscape; it is anything but quiet. The womb filter: amniotic fluid, embryonic membranes, uterus, the maternal abdomen-low frequencies, and blood in veins whooshing, the mother's voice and body noises such as hiccups and the gurgles of digestion, and of course, the heartbeat. The mother's heartbeat can be as loud as a vacuum cleaner and ultrasounds as loud as a subway car arriving in a train station. There are studies showing that the wombscape sound shapes the plasticity of the fetus brain, and prepares newborns for hearing and language development, this is called "early life programming."[65] We can try to mimic the wombscape, imagining sounds being filtered through the body. We can use a hydrophone–a pressure microphone designed to be sensitive to soundwaves through

[63] Chamberlain, D.B. 2016 "The Fetal Senses: A Classical View. "Retrieved December 12, 2017: http://schoolbiosynthesis.es/wp-content/uploads/2016/09/The-Fetal-Senses-A-Classical-View.pdf

[64] Ibid.

[65] Benson, C., Heller, H., Benson, C., Lahav, A., Webb, A. R. 2015. "Mother's voice and heartbeat sounds elicit auditory plasticity in the human brain before full gestation." *Proceedings of the National Academy of Science of the United States of America*. Retrieved August 3, 2020: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4364233/

fluid matter–on the abdomen to get an idea and sample for our wombscape and explore the affect it may have in listeners.[66]

All newborns emerge with the same cry; it is near impossible to distinguish one from another, even as a mother. This could be for many reasons and serve many a purpose. Should something happen to a birth mother, then the indistinguishable cry may help draw attention from another. It could be that, considering again Dr. Krause's Acoustic Niche Hypothesis–in which animals adapt their calls to a frequency less populated by other environmental sounds–and aside from other biological reasons, a newborn's cry is shaped by the wombscape from whence it came, and I speculate that one wombscape is similar to another. Primarily what a fetus is hearing is low frequency. So, it would serve that they would have an instinct to initially call out in a high frequency range. The baby then develops its cry according to its surrounding, such as a household in the city versus a country, a household with other children or not, a household with constant media sound. They would adapt to their soundscape, finding their acoustic niche.

Artist and scholar Jen Heuson in her Media, Culture, and Communication Doctoral dissertation, references my use of the term wombscape from its initial introduction in the article "Future Memory: Womb Sound as Shared Experience Crossing Time and Space". (Colbert, 2015) She takes the theory that our earliest sounds begin to shape our future selves, and applies it to what she refers to as, "productions of heritage", (Heuson, 2015) specifically in the Western U.S. region of the Black Hills.

> There is an obsessive preoccupation with both the preservation of heritage materials and myths and the future "payoff" of heritage productions. Heritage producers, similar to Colbert, are creating sound environments that they hope will pass along their own inherited senses and affects. (…) Frontier aurality involves a technological mastery over time and space; it is myth made experiential heritage, a sort of immortality through a materialized sensory inheritance. Aurality opens up entire lifeworlds as resources for future use, teaching what these worlds mean and how they

[66] These tests can be accessed and heard through the original article on *Sounding Out*: https://soundstudiesblog.com/2015/01/12/past-future-womb-sound-as-shared-experience-crossing-time-and-space/

> are to be felt and inhabited. And, importantly, these "teachings" or experiences are what are being made as resources, commodities, and products for both tourist and heritage industries. (Heuson, 2015, pp. 237-239)

There is already an aural culture surrounding and affecting us, from the beginning. Media, marketing, politics, peers and schooling. The sound of the recording material for film and television from the 1950's–it's warm limited frequency range and dust, the slight addition of music just under, subtle and following the emotive curve of the story–for me this still calls up my grandmother's house where the television was a time-machine always switched on to a channel playing older shows and movies. How can art explore this in a critical and aesthetic manner, at times perhaps even creating counter-aurality? How can we immerse a listening back into it? The disembodied sound–the acousmatic, the haunting–embodied once heard. Sociologist Doreen Massey said feeling out of place is the cultural symptom of late capitalism's political and social reality, creating a sense of place may actually involve the use of a sense of dislocation.[67] The power within that act, and the artistic urge to create, or re-create it. I am interested in exploring why it happens, what gives it that power. But also, how artistic acts can explore it.

II. 2. Soundwalks to access time, space, and place

Connecting soundwalks as way to connecting and exploring listening, memory, and movement together, can be compared with Bergsonian methods. Henri Bergson, whose writings on memory inspired Deleuze, which I will write about further on at the beginning of Chapter 3, believed that when it comes to memory, nothing is ever lost. Beyond the mind, which serves to store and activate habitual memory, formed by habit and stored in brain matter, there is pure memory, stored within consciousness. (Bergson, 1911, chap. 2) As not clear where this pure memory archive resides, one could speculate the body in full, especially in consideration to cellular memory,[68] which the full and complex body as a sensing and remembering

[67] Massey, Doreen. "New Directions in Space", Chapter in *Sonical Relations and Spatial Structures*. ed. Derek Gregory and John Urry. 1985. London: Palgrave. ISBN 978-0-333-35403-2

[68] Interestingly, the cellular memory hypothesis seems to be more connected to procedural memory and the body doing, outside of consciousness, such as forming a traumatic memory, or

system stores. Bergson imagined the brain processing and selecting with the aid of perception which future memories called for immediate action, usually the habit memories, while the pure memory is stored and called during less engaged moments, like daydreaming, or if it can be used to recollect during perception. (Bergson, p. 42-43)

Much like how the brain processes sound in its two streams, and just as mysterious. When truly trying to consider the mind as a sensory network, more complex than the simplified five senses many of us grew up with, we almost always need to cross the border of the brain itself and consider the full body as part of this network. As Labelle stated, "sound conditions our sense of place (...) it participates in relational exchanges, in our daily experiences."[69] When considering that, soundwalks become an especially useful and engaging method of listening, deep listening, and radical listening, weaving perception with consideration and active imagination of listening to the past.

The term *soundwalk* was first used by members of the World Soundscape Project under the leadership of R. Murray Schafer in Vancouver in the 1970s.[70] Hildegard Westerkamp defined soundwalking in her 1974 essay "Soundwalking", as "...any excursion whose main purpose is listening to the environment. It is exposing our ears to every sound around us no matter where we are." (Westerkamp, 1974, p. 4) While the exact when and why is still a mystery to us, for the earliest pre-humans the act of walking likely would have arisen from the need to find ways of survival and growth, it allowed our hands to be free to use tools and touch our world, to carry and

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practicing something. The body remembering, rather than the brain remembering something about the body. Cells do have mechanisms to pass on memory to next generations; this has been so far studied in traumatic memory. Cosier, Susan. "Could Memory Traces Exist in Cell Bodies?" *Scientific American*. Retrieved 1 May 1, 2019: doi:10.1038/scientificamericanmind0515-14b

[69] Biserna, E. (August, 2010) "Brandon Labelle, Where do sounds come from and where do they go?" *Didimag, Issue 56, July/August*. Retrieved November 1, 2020: http://digicult.it/digimag/issue-056/brandon-labelle-where-do-sounds-come-from-and-where-do-they-go/

[70] While this is true of the term "soundwalk", I want to also acknowledge prior to their use artist Max Neuhaus conducted his listening walks between 1966 and 1979. There is a whole timeline that could be mapped of listening with walking, the span of which would go back to the songlines of Aboriginal peoples of Australia. Early versions of this thesis research did begin down that path, but it was soon realized it would be a whole other dissertation to map it out properly. Instead of attempting a summation of such expansive history, I will admittedly jump from that early speculative moment where survival moved towards aesthetic, to the contemporary term soundwalk.

throw, and explore a world where the climate had changed drastically to deforestation. Once these needs were met, walking could become in part a symbolic form of relationship with the world, possibly the first aesthetic act of humanity.[71] A walk in search of water, or, if the location of the water is known, a walk to a trusted source of water where beauty and sensation can be experienced with thought and focus. We can extend this theory to the act of listening, in a possible parallel history. In *Camera Lucida*, Barthes states, "I want a history of looking." [72] I want histories of listening, and deeper listening to histories.

II.2.a. The first Wayback Sound Machine

Working on a project in Cornwall years ago, I walked a lesser-known arm of the Santiago Pilgrim Route called St. Michael's Way, an ancient pilgrim path half-covered in time and time's artifacts. As I got lost again and again making my way towards Saint Ives, I found myself marveling at all sorts of sensations. My ears tuned from the project on which I had labored, I was especially taken by the sound. Towards the middle of the path atop the hill, the wind from both sides carried sonic pieces of the day to day from the villages on each side, wisping past as quickly as they came. I began to wonder what this path may have sounded like back in the time of its famed thieves and pirates, and back when its soundscape was composed of shared occasions celebrated with the voices of people, priests, prayers, and populated markets and fairs along the way. As I continued walking, I wondered how it might have sounded even before then, before the hills were blanketed with crops and cattle, before the many battles that must have been waged; villages built and grazed. Were there more birds then? Were there more trees? Were there more boar and fox? What about even before these hills were hills; could there be a way to sonify these hills forming? I started to dream of a wayback machine for sound. What if as you walked this path, you could listen to time spinning back, listen to how it might have sounded, listen to its history? And what could you take from that experience; what would the experience contribute? (Colbert, 2014a)

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[71] Careri, F. (2017). Walking as an aesthetic practice {Walkscapes: El andar como práctica estética} Barcelona, Spain: Editorial Gustavo Gili. pp. 19–20.

[72] Barthes, R. 1981. *Camera Lucida (La chambre claire)*. trans. Richard Howard. New York: Hill & Wang. p. 12

This first experience was interestingly acousmatic, with those aural fragments traveling to me from unknown source and emission. A bit like Rabelais' frozen sounds as well. The aural hauntology (I will return to this term further on) of this experience, a persistence of sounds alluding to and calling up the past, led to considering sound through layers of time, and how that might be perceived; and how that might be created to be perceived. I was inspired to explore the concept in practice, but also wrote an early paper on it in 2013, that begins with a quote from *Place Matters*, where Frank Vanclay says, "'Place' is generally conceived as being 'space' imbued with meaning. Thus, it refers more to the meanings that are invested in a location than to the physicality of the locality." (Vanclay, 2008.) [73] Biophysical characteristics (Biophony) can establish a foundation for these personal meanings that transform the sense of space to place (the specific sound of the trees in your childhood backyard, calling up the hiding spot you would run to when you didn't want to go inside in the evening, facing fears of the dark with a shield of familiar sense).

> Before examining how earlier cultures might have used auditory spatial awareness, we need first to explore how sound connects listeners to an external event. What would hearing have meant to our distant ancestors? (Blesser & Salter, 2009, p. 71)

Dr. Miriam Kolar is one of the earliest scholars I contacted on this concept, having been recommended to her research on Chavín de Huántar, a 3,000-year-old ceremonial complex in the Peruvian Andes. For six years, Kolar measured acoustics and conducted auditory experiments on site, working towards an "integrative archaeoacoustics", which brings together acoustics, audio engineering, perceptual psychology, anthropology, and computer science. (Kolar, 2013a) She states how important it was to this work to consider subjective possibilities, along with the application of the scientific method towards theory and measurement. Kolar explains, "I focus on understanding how sound influences people, what people do with sound, and what this means for humans as individuals and social beings." (Kolar, 2013b, para. 3) For example, at Chavín, Kolar and her team explored the effect the following channels of water built in underneath the structure's Circular Plaza staircase and considered the perceptual affects it would have had on audiences thousands of years

[73] Vanclay, Frank. 2008. *Place Matters*. Sited in "Wayback Sound Machine: Sound Through Time, Space, and Place", in *Soundscape: The Journal of Acoustic Ecology* 13, no 1 (Winter/Spring): 21-24 2014

ago. Chavín was a spiritual temple, and it is speculated to have been a Shamanistic site in the context of convincing followers, with evidence of production and consumption of psychoactive plants found widespread. Signs of light manipulation and exclusion, gathering and isolating areas, and the acoustically manipulated and morphed sound of water–the water channels diverting, absorbing, or reflecting–could facilitate full sensory psychotropic experiences. "Archaeologists toe a wavering line: as professionals, we strive to present a transparent account of our explorations and discoveries, but at the same time, we're compelled to create narratives that explain our activities and motivations." (Kolar, 2013b, para. 4) Much like archivists, or other employments towards the documents of time. Kolar states in the section, "Echoes of Ancient Experience," that "Sound–because it's experiential–is an ephemeral artifact of spaces and objects that we can use to better understand past life. Performing a replica shell horn inside Chavín's galleries, I can feel through my body the resonances between instrument and architecture, a physically and emotionally transformative experience that would have been similarly sensed—but interpreted differently—by humans in the past". (Kolar, 2013b)

II.2.b. Radio Terramoto (and the SUNY Binghamton Historical Soundwalk)

The concept of a Wayback Sound Machine concerns itself with, as well as problematizes, histories–and what we define and decide as histories. The Wayback Sound Machine works to challenge histories, rupture historic lines, challenge who drew them, at times reveal how they were created, at times reveal who created them, and why. It depends on the individual project, but the Wayback Sound Machine's concepts and questions help the guide and uncover and express what is uncovered. Allowing for another auto-ethnographic moment to reflect the internal on that thought: as I did in the first Wayback Sound Machine, I often find myself imagining what the place I am experiencing sounded like at different points of time while walking, as well as placing that imagined soundscape next to the current one on the path I am experiencing; then super-imposed onto…then fluctuating back and forth through a time line and geographic line, in a comparative sensory experience. The street I live on in Lisbon, Portugal was once an important stream that made its way to the Rio Tejo. I can imagine in front of the church that stood then, and still stands now,

the washing of clothing, the swimming, the watering of animals, the sounds of the water and current touching earth and rock.

A project that I explored this with is *Radio Terramoto {Earthquake Radio}*,[74] (Colbert & Costa, 2013) a radio based soundwalk in which audience members walk a path from Convento do Carmo, down one of Lisbon's winding hills to the river. An old note from a work notebook from the conception of the project reads, "Will attempt to go acoustically back in time." At key moments, and broadcasted over specific radio frequencies, the audience listens on portable radios to "a broadcast from back in time" of the great and horrible earthquake of 1755 that destroyed most of the city and killed up to 100,000 people with its subsequent fires and tsunamis after the initial quake itself, bringing the seemingly distant devastation into contemporary space and consciousness. Having no access to actual recordings of the event of course, I had to imagine the subjective experience through my own senses internally, employing personal and collective memory gathered when reading accounts from survivors, along with early data that was collected.

The broadcasted radio-play "from the past" weaves down the path with the audience, and into their soundtrack of the present, creating a dissonance and dialogue of time and place, embodied and collective. The audience considers this history from the perspective of the phantom recorder–each pause of fear, each decisive turn for survival, each witnessed disaster–we hear as they might have heard, their sonic POV. We bare witness in two different times, at the same time and place. As the tsunami hits, we are under water with them, and the transmission goes out.

< Figure 4 >

Sound Studies scholar and author of the *Sonic Color Line,* Dr. Jennifer Stoever wrote about *Radio Terramoto* in her sound studies blog *Sounding Out!*

> *Radio Terramoto* is a soundwalk research and art project designed to bring this seemingly distant devastation into contemporary consciousness. Based on the idea of

[74] The audio file of *Radio Terratoto* can be listened to here: https://soundcloud.com/maile-colbert/radioterramoto-mix-of-live

listening to sound from a past historical event, "Radio Terramoto" is a traveling audience immersive event.[75]

The project and research for *Radio Terramoto* asks the question, what can listening to the past reveal about the now, both in artistic practice and research? Can experiencing an event from the past, embodied and present, allow for a new embodied knowledge and understanding of that event? What we experience, as opposed to, for example, what we read, is processed and stored differently within us, and art conveys insight into how we understand and order our world.[76] *Radio Terramoto's site*-based (yet mobile) sound design weaves between the present and the past and is based on research on the earthquake, using documents of first hand experiences and the first seismic and "earthquake-proof" architecture that came after what may be the largest earthquake recorded in history. The soundwalk included hand-held sculptural octahedra, researched and designed by artist Jeff Cain, created using a geometric framing system designed and assembled as a singular form approximating a Pombaline cage, the first modern earthquake resistant architecture. The radio transmitter and other key electrical devices were suspended in these 1-foot 3-inch octahedra made of brightly colored sticks of wood, held together with friction and tension. The large cage broke apart into the individual octahedron to aid in the transportation of equipment and providing a visual way-finding aide for the participants.

The concept and project inspired Dr. Stoever to develop with her students a historic soundwalk where their University, the State University of New York, Binghamton, was located. The concepts and methods were worked into a class syllabus, with a final project resulting in a sound-map and archive exploring and investigating the soundscapes of Binghamton's past and present.[77] Stoever wrote about the outcomes with the students: "the majority opened their ears to alternative

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[75] Stoever, J. (2014). "SO! Amplifies: Maile Colbert, Rui Costa, and Jeff Cain's "Radio Terramoto". https://soundstudiesblog.com/2014/10/23/so-amplifies-maile-colbert-rui-costa-jeff-cain-and-radio-terramoto/

[76] Bender, J. (1993) "Art as a Source of Knowledge: Linking Analytic Aesthetics and Epistemology". *Contemporary Philosophy of Art,* (J. Bender & G. Blocker, ed.) Englewood Cliffs, NJ: Prentice Hall

[77] Stoever, J. 2017. "The Binghamton Historical Soundwalk Project." The Project can be found online here: https://binghamtonsoundwalkproject.wordpress.com/

understandings that left them questioning the exclusivity of their *own* listening practices. Students realized that while they may have been inhabiting Binghamton for the past few years, they hadn't been perceptually living in the same town as year-round residents, and, conversely, that the locals' tendencies to hear students as privileged nuisances had historical and structural roots." (Stoever, 2017) Listening as an act towards an embodied empathy and understanding within a shared geography, spanning generations.

II.2.c. Soundwalk-walk: Listening backwards, moving forwards:[78]

Soundwalk-walk (Colbert & Monteiro, 2017) is a practice-based art research project, holding an emphasis on *walk*. A guided and shared aural experience of a soundscape along a path, with a concentration on movement, the external and the internal, and the relationship between our bodies listening and moving through time, space, and place.

Why do we call it *Soundwalk-walk*? What makes a soundwalk-walk different from a soundwalk? Or a walk, for that matter? How do we define this, and why do we define this? Having already described a soundwalk, we know that a soundwalk and a walk hold path in common, in the sense that more usually we set out on a path with a means to an end in mind. A soundwalk-walk wishes to hold focus on the moment between the point A and B, linger there with a study and play on the relationship between the movement of walking with the activity of listening, and consider what knowledge and applications can be gained from this. Walking and listening–two acts often took for granted, automatically, not often considered together. (Colbert & Monteiro, 2017)

II.2.c.i. Walking towards our bodily ears

[78] **Soundwalk-walk: Listening Backwards, Moving Forwards,** a practice-based research project by Maile Colbert and Ana Monteiro **(**FCSH-UNL/IFILNOVA). The original proceedings from the Invisible Places, Sounding Cities Sound Symposium, written by Colbert and Monteiro, 2017, can be found here: http://invisibleplaces.org/#proceedings. Excerpts, the score, and re-writing from that paper are within this sub-chapter, with permission from Monteiro. A blog with images and sound recordings can be accessed here: https://soundwalk-walk.tumblr.com/

From the primordial and crude encounter of a moving body in a moving world, walking arose as necessity, but also as an aesthetic capacity to be explored.[79] In the pages of Baudelaire we find the ephemeral figure of the flâneur, an ambivalent figure that, between curiosity and leisure, explores by foot the urban space. But only from the twentieth century has the walk been used as an art form in an attempt to overcome traditional forms of representation and blur borders between life and art.

The collective forms of action of the Dada excursions, of Surrealist ambulation, and of the Situationist drift, originated from the literary sphere movers were part, operating in an active extension of writing–turning page into territory and pen into the body of the walker. The Dadaists understood that the entertainment system of tourism would have transformed the city into a simulation of itself, and in response they propose the exaltation of the banal and lack of meaning. The Surrealists understood that there was something hidden in the emptiness proposed by the Dadaists, and within the unconscious city itself. The drift of the Situationists made possible the orientation of the living organism of the city, directing towards places that seemed to incorporate a kind of elsewhere and otherwise, capable of challenging a Society of the Spectacle.[80] Here, new forms of behavior appear as modes of occupying space, aiming for autonomy and freedom, in a construction of a kind of liquid city that uses erratic ways of walking as a strategy to deceive dominant control mechanisms in place. In the sixties, when using daily movements and refusing technique in the construction of their work, the dance begins to affirm an emancipatory and democratizing dance agenda. Choreographers such as Steve Paxton and Yvonne Rainer started movement research on the apparent simplicity of walking by decomposing its movement, analyzing it carefully, and experimenting with its infinite possibilities. The deceptively simple act of walking slowly, of walking backwards, for example. (Colbert & Monteiro, 2017)

We were interested in exploring walking through the decomposition of movement, and as a meditative/imaginative practice in its connection to

[79] Careri, F. (2017). Walking as an aesthetic practice {Walkscapes: El andar como práctica estética} Barcelona, Spain: Editorial Gustavo Gili. pp. 19–20.

[80] Debord, Guy. 1967. *The Society of the Spectacle.* [1967] *The Society of the Spectacle*, translation by Fredy Perlman and Jon Supak (Black & Red, 1970; rev. ed. 1977). A 1967 work of philosophy and Marxist critical theory by Guy Debord, in which he develops and presents the concept of the Spectacle, where social life has been replaced by representation.

proprioception: the unconscious perception of movement and spatial orientation arising from stimuli within the body's proprioceptors.[81] In humans, these stimuli are detected by stretch receptors in muscles and joints, as well as by sensory neurons in the semicircular canals of the inner ear. Here we can apply a playful expression we're calling, "bodily ears", and consider how hearing can involve the whole of the body, and further consider the effect of movement upon that hearing.

There is a focus in this work on exploring the relationship of proprioception and kinesthesia, which refers to the perception of the position and movement of the body by means of how those sensory organs in the muscles and joints affect memory and narrative making. This becomes challenging, as kinesthesia "…remains largely unexamined and any discussion of bodily movement in and of itself as a sensory modality and therefore as potential resource for meaning-making or semiosis has been largely absent" (Farnell, 2012. p. 121). But in practice, the apparently mundane action of walking can be situated to gain meaning due to social and physical context. Action signs like walking are part of a deictic reference, containing an indexicality and performativity. (Farnell, 2012) Combining focal attention on walking with listening during the walk provides not only embodied information, but can create a sense of space and place, providing a platform for exploring memory.

II.2.c.ii. Listening towards a divination

As mentioned in a prior section, we begin to hear around four months into gestation, our first soundscape a wombscape. (Colbert, 2015) Jonathan Sterne writes a theory that everything that is known about hearing in its natural state "…is a result of interactions between ears and sound technologies", which could include at different times various recording and playback mediums. (Sterne, 2003, p. 69) This places the ear in part of a chain of hearing equipment, and hearing equipment tied to "ways of hearing" and "institutional contexts that defined hearing, as well as what was heard", tied to time and history. "The only way a hearing researcher has access to hearing as pure faculty is through the subject's highly cultured act of listening". (Sterne, 2003, p.

[81] There are specific nerve receptors for this form of perception, similar to the specific receptors for pressure, light, temperature, sound, and other sensory experiences, written about over a century ago. Sherrington, Sir Charles Scott. 1907. "On the proprioceptive system, especially in its reflex aspect".

72) We could extend this to include the body, and if, as he further theorizes, this can show us how listening and learning to listen is in part a cultured act, this can further us into the consideration of the wombscape being our first act of learning to listen, through a bodily medium. (Colbert & Monteiro, 2017)

II.2.c.iii. Case-studies and reflections

There were two opportunities to test the soundwalk-walk prior, but separately, to Invisible Places 2017, where we were able to guide in person and together. We had two opportunities after as well:

a. In Porto, led by Colbert, the soundwalk-walk was performed during a class in a performance course called Expanded Sound Practices for Performance, at the Fine Arts School, in the University of Porto. It was a rainy day, and so the soundwalk had to be performed inside. We choose an acoustically active open stairway, with a large window running floor to ceiling to one side. The interior and highly reverberant nature of the location, along with the students coming from a performative background, led to a kind of micro-ecology of human sounds feeding off each other, and feed-backing together. A cough became a chorus, and much more of the internal was vocalized and expanded upon. Listening to the recording, made by two of the students who were simultaneously participating–one with binaural microphones, the other with the on-board microphone of a H4 Zoom recorder–it was fascinating to follow this collective and imagined sonic narrative travel somehow from a primordial soundscape, then changing and shaping through time to the dawn of man, an industrial age, and even ending in some sort of imagined sound of the future.[82]

b. In the Caribbean, led by Monteiro, the soundwalk-walk took place at a small plaza in the center of the capital in the middle of a weekday. This provided a rich fabric of sound, from cars passing by, to the frantic activities of local businesses, to a mysterious and continuous monotonous sound made by a man laying down in the perimeter of the plaza, which for some

[82] You can listen here: https://soundcloud.com/maile-colbert/expanded-sound-practices-for-performance-recording-of-soundwalk-walk-fbaup

participants evocated a ritual. The practice of slow walking, backwards and forwards, caught the attention of those passing by. Some remained–intrigued–while others assumed it was a street performance, and some tourists took photos. While guiding the experience, an awareness arose of the performative and disruptive force of bodies moving in an extremely slowly and focused manner, as it disturbed the overall rhythm of the city, while utilizing daily movements everyone is familiar with.

II.2.c.iv. Soundwalk-walk at Invisible Places, 2017

Our individual experiences led to some changes when we were finally able to guide the soundwalk together at the *Invisible Places, Sound, Urbanism and Sense of Place*, conference in 2017. There were ideal conditions, in a botanical garden of a university on a volcanic island, the immediate landscape and architecture calling up many eras at once. The biodiversity of the island gave a vibrant soundscape, and the weather conditions allowed the soundwalk to be outside. These aspects, in consideration with most participants not coming from a performative background, led us to the decision that this time we would instruct the vocalizations to be internal and imagined. On this volcanic island, we could feel the dust from a thousand different times, coming together in one breath–entering the body: the mouth, the nose, the eyes, the ears. Particles mix with particles, blending and compressing time and space, giving us the option within our bodies to form an embodied place. Our feet firmly planted in ever forming soil, we could well imagine peeling back the layers, of era upon era, event upon event, scrolling through time as we walk.

Some reflections on the experience from participants there:

- I remember talking to a fly that lingered right in front of me as I tried to match its tones, and the sound of the seeds falling to the ground sounding like explosions as going forward the external from internal became so loud and intense in a good way, communicating with all things.

- The walking exercise where we had to move as slow as possible made me very aware of my own body and movements (…) especially its limitations.

Since I had to concentrate to the walking itself so much, and simultaneously was asked to listen, I at first mainly heard the sounds of the walking process made by me (and that of the participant nearby): my feet on the gravel, the very light breeze in my ears, etc.

- Walking became a sort of touching the floor and the air around me. As a matter of fact, I recall that the slow walking movement also intensified my sense of smell as well. In a way also a form of touch.

II.2.c.v. Ethnographic Experimentation Fieldwork Devices in a Colonial Garden

Colleex, a network of the European Association of Social Anthropologists (EASA), held a workshop, the *Ethnographic Experimentation Fieldwork Devices and Companions* workshop, at the Jardim Botânico Tropical, also known as the Colonial Garden, in Lisbon, July 2017. Upon contextual research into this location, we were struck by the lack of–or reframing of–information regarding the garden's problematic past. This included the garden's official website, where it is stated, "From its beginnings, the Colonial Garden was also understood as a center of study and experimentation". [83] We wanted to highlight, even embody, this history using Soundwalk-walk as a sensory art and ethnography practice. At the point in the walk when we begin to guide back through time, we also gave historic information:

The Portuguese World Exhibition (*Exposição do Mundo Português*) was hosted in Lisbon between June 23rd and December 2nd in 1940. This massive exhibition was staged to promote and boost Portugal's sense of superiority in a global playing field. The colonial section, divided into seven sectors, offered visitors the chance to discover 'in two hours' the whole of the Portuguese empire 'from Africa to the Pacific' and was 'an ethnographic document of three continents: Africa, Asia and Oceania'. It was installed in the then named Jardim Colonial (currently the Belem Tropical Botanical Garden), with a series of artificial sub-environments designed to

[83] The statement on the site as of 2017 can be found here: https://www.ulisboa.pt/patrimonio/jardim-botanico-tropical

give visitors the sensation that they were in the heat of the tropics. The third sector comprised the 'Villages and Dwellings of the Indigenous Peoples – a Document of Usages and Customs' where 138 native peoples 'lived'. It contained "settlements" including peoples from three villages of Guinea (Bijago, Fula and Mandinka); Angola (including the house of the 'king of Kongo'); the villages of the Muchope and Makonde peoples of Mozambique; replicas of 'typical' Cape Verdean and Macanese homes; a village of Timorese on top of a cave; a 'house of the Natives' of São Tomé e Príncipe; typical Indian dwellings; and the Village of the *Muleques* (a term of endearments for mischievous children), where the 'Indigenous children could play'.[84]

> The inclusion of human beings engaged either in recreations of daily activities or representations or formal performances created the illusion that the activities on show were real, not representations, and this in turn created an illusion of authenticity. However, exhibitions were 'theatrical events' also similar to the practice of colonial politics based on a strategy of ordering everything with the aim of revealing a pre-existing plan and giving a meaning to such practice. (Ferraz de Matos, 2013, p. 204)

From the text for this walk: "What of the sensations of those brought to this environment...familiar flora touched, moved, sounded by unfamiliar air? That sonic environment, the known woven into the very unknown. The soundscape, too heavy, too full, with the staged and curated activities of the day to day of many lives and many places and many times, forced and collapsed into a disorienting costume saying this is home." This work is ongoing, in research and performance. The quietly radical acts of attaching attention to walking while listening, and listening while walking, continues to reveal further connections and research, and provoke further questions and challenge. What feels clear thus far is a call for a more sensory inclusive research and the information that can be gained from that, across disciplines. We have published and offer our score with the welcome for people to perform it, and the hope for further reflections from various places. (Colbert & Monteiro, 2017)

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[84] Ferraz de Matos, P. (2014) Power and identity: the exhibition of human beings in the Portuguese great exhibitions, Identities, 21:2, 202-218, DOI: 10.1080/1070289X.2013.832679. Accessed April 12, 2017: https://www.tandfonline.com/doi/abs/10.1080/1070289X.2013.832679?cookieSet=1

II.2.c.vi. Soundwalk-walk, the score[85]

Soundwalk-walk is a soundwalk with a concentration on walking, movement, and the relationship between our bodies listening and our bodies moving through time, space, and place, guided by artists and researchers Ana Monteiro and myself. A guided, scored, and choreographed walk that includes the focus of deep to radical listening, intertwined with the focus of movement meditation and kinesthetic exploration. Two of composer Pauline Oliveros' scores from *Sonic Meditations* (1974) were woven with a movement meditation, with permission from her foundation, as well as the concept and question of sounding place, and sounding place in the past. Oliveros' practices of listening and Deep Listening offer guides for both listening as well as sounding, often as radical acts in their concentration and deep attention to our sonic environments. The practice of Deep Listening is notable for its commitment to cultivating receptivity, to "extend receptivity to the entire space/time continuum of sound". (Oliveros, 2005) And like *Soundwalk-walk*, Oliveros held import to the relationship between the body moving, and the body listening, and to the internal and external soundscapes that could be accessed in that practice. Like many of Oliveros' Deep Listening practices, *Soundwalk-walk* begins with a slow walk, tuning the body, paying attention to it, turning that attention inwards and deeper, then beginning to attend slowly outwards using the listening practices, such as: *Walk so silently that the bottoms of your feet become ears*.[86] (Oliveros, 1974)

Walking slowly in order to notice and consider sensation and perception. Walking slowly with deep listening changes our usual time, creating an event within ourselves that can be called upon later. Remembered for its different time felt, its concentration and consideration to sensation, how this affected us, what this made us think about and feel. In a way, this allows a moment for the body with the mind to record. The start button: slow down your walking, your breath, listen and feel. The end button: take a deep breath, open your eyes, and come to the present. The playback: recall what you were experiencing and thinking with the other

[85] The full score can be found in the Annex, pp. ii-iii.

[86] Oliveros, Pauline. "Native", in *Sonic Meditations*. Smith Publications. 1974.

soundwalkers. One of the participants on the island wrote to me the following year to say that she still returns to that moment every now and then.

II.3. Field Recording and Phonography: Archive forming and archive using–time in the medium

> As we are primarily a visual culture, no longer connected to what environments can tell us through sound, we've lost aural acuity once central to the dynamic of our lives. From what we have just begun to see, it appears that ancient human beings had learned well the lessons imparted by natural sounds. Their lives depended as much (if not more) on their ability to hear and understand the audio information imparted by their surroundings as those given by visual cues. (Krause, 1993, p. 6)

We walk, and we listen, and we have enacted these two activities together from time immemorial, often without much thought about it. We tend to think of this as two acts, rather than two parts of a complex bodily system sensing the world around us and giving us information. Sometimes a sound arrests our movement, we stop to listen. We stop to focus, to not make sound from our own body, to try and silence ourselves to bring in "pure" that outside sound in. The focus of that moment, the intent of the act, and the nature of the sound that called our attention in the first place, is very likely the beginnings of the desire to record sound–whether person, place, or thing. Once we began to listen aesthetically, once it was no longer about pure survival but also beauty and wonder, there would be pleasure and aesthetic interest, and the desire to experience again what our own memory is not fully capable of. When we lose something–a person, a moment–it is often more the sense of that/them that we miss. Memories may initially haunt as we attempt to call up sounds and smells and temperature and touch. They may play back to us as an abstraction, missing an essence. *Essentia*: being, from *esse*, to be. We use this word in connection with the senses, an essence for flavor, an essence for scent. We debate over what essence means, perhaps elusive due to its connection to the senses, which we are also still striving to define. What makes something what it is, and what happens to that

something when the something it is essential to is gone?[87] Can we capture that, in a sense, bring an essence to our memories?

Perhaps our tools of capture were not intended to mimic, but rather serve mnemonic. When the Lumière Brothers developed their *Cinématographe*, within a few films they began to experiment with the earliest cinematic techniques to change time and the sense of movement, to create narratives and provoke affect and emotion.[88] (Lumière, 1895) The first sound recording made was not of a voice speaking, but of a voice singing artistic and expressive composition. Édouard-Léon Scott de Martinville's recording on his Phonautographie of a rendition of *Au Clair de la Lune*, 1860, was recorded nearly two decades before Thomas Edison. In 2015 the UN inducted his work and recognized the sound recordings as, "humanity's first recordings of its own voice", but in his own lifetime Scott de Martinville's work was overshadowed by Edison's. Humanity's first recording of its voice; the choice was through song, through expression to provoke sensation.[89] (First Sounds, 2007-2009)

And when sensing became less about survival, and more about an aesthetic? Perhaps that is when we began to dream of ways to capture the sense around us, as a bridge through limitations on time and memory, to return. Are the material aspects to sound transcendent? I hear here, not there…put simply this locating sense can be provoked through a sound object (a hammer hits the wall next to me), or a recording playback device (the recording of a hammer hitting a wall is played next to me).

> Your words, for example, are preserved in the tin-foil, and will come back upon the application of the instrument years after you are dead in exactly the same tone of voice you spoke in them in.

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[87] Jones, Jan-Erik. 2018. "Locke on Real Essence." *The Stanford Encyclopedia of* Philosophy. Edward N. Zalta (ed.) Stanford, California: Metaphysics Research Lab, Stanford University: https://plato.stanford.edu/entries/real-essence/

[88] You can watch this unfold in the 1996 "Lumière Brothers' First Films" collection from Kino Video.

[89] Another sounding of the past, *First Sounds* is a project that studies, researches and develops methods and technology to play back the earliest audio recordings, including from Édouard-Léon Scott de Martinville, Thomas Edison, Charles Batchelor, and the Volta Laboratory Associates. Their website archives their work between 2007-2009, including the research, tools, and access to the recordings to listen to, as well as use with attribution. All their work is under Creative Commons Attribution licence. Their statement: "We have digitally preserved every airborne sound recording known to exist from before 1861, plus many incunabular recordings made thereafter, and we offer free and universal access to our images and sounds on this site." Retrieved April 23, 2018: http://www.firstsounds.org/sounds/scott.php

How many times?

As long as the tin-foil lasts. This tongueless, toothless instrument, without larynx or pharynx, dumb, voiceless matter, nevertheless mimics your tones, speaks with your voice, speaks with your words, and centuries after you have crumbled into dust will repeat again and again, to a generation that could never know you, every idle thought, every fond fancy, every vain word that you chose to whisper against this thin iron diaphragm. [90]

What is material distance in concern to sound? I hear here, not there. I record that here, you hear there, here. Jean-Luc Nancy writes about the cognitive subjectivity in sound, about intentionality in listening, how the listener listens, and their choices in the act of listening. In *Listening*, (2007), this is in reference to listening to Pierre Schaeffer, but we can extend the ideas of resonance, of the act of listening, sending and resending, the resonance of both the structure of the subject, and of sense. (Kane, 2013, pp. 439-447) And now we can consider what happens with the addition of the intentionality to the act of recording, which includes the intentionality of the recordist's listening choices, and what they intend for the speculated future listener.

A recorded sound transcends geography. A recorded sound transcends time. It allows a listener to share a space and perspective with the recordist. It allows a future people to hear the songs, languages, voice, and sonic surroundings of people passed, and possibly of their shared past. It allows for an extinct bird to call into the future, for a child to hear that bird and wonder, and question, and to have that question affect her future and therefore perhaps the future of others. I often think about what soundscapes or sound I have experienced that O. might not have the opportunity to experience when she's older. Already since my childhood visiting family summers in Hawaii, three birds that I had heard in my childhood soundscape; that my mother grew up with, that her father grew up with, that his parents grew up with (and so on), are no longer calling in the wild. But what the world and I can share with O. and her

[90] Owens, B. 2012. "Thomas Edison's Tin Foil Recording." *Inside the Conservator's Studio, An Art Conservator's* Journal. From an interview with Thomas Edison from *The Washington Post*, June 11, 1878, during his presentation of his "sound writer" at the Smithsonian Edison's *Ars Memoria*, concept for the phonograph, what he called his Sound Writer. Retrieved November 13, 2015: http://insidetheconservatorsstudio.blogspot.com/2012/04/0-false-18-pt-18-pt-0-0-false-false.html

generation–can give her, can leave her–are recordings, context for those recording, and a warning for the future.[91]

The sound library I am constantly creating, since my earliest sound art and design works, shaped by my choice and perspective, my art and my research–where to hit start, when to stop, where to point the mic, what equipment to use, how to frame this aural moment that captured me and invoked the desire to save and to share. I thought of this often during the early years of this thesis when a friend and great soundscape ecologist and composer had passed. Steven Miller left a wealth of music, sound, and writing that his daughter and family can share.[92] His daughter will be able to put on headphones and transpose to a space her father formed with his perspective, his choices, his interests. A sharing active with him, transcending space and time, her in her now, sharing the soundscape of his now, then. This is not a rigid document of time, her now might bleed in through headphones or an open window in the room she is listening in and may mix and mingle with the soundscape of his then-now, mixing and mingling time and place, and perspective. The Wayback Sound Machine isn't about traveling to a past, but experiencing a past in, and with, our present...making it present.

And as I write this, my first official full draft of this thesis, (2018) I am listening to the recordings of another friend and collaborator, made in various areas in Bolivia. Manrico Montero was a Mexican sound artist, phonographer and field recordist, free improviser, and researcher in bioacoustics and biosemiotics.[93] I just found out he passed away. I write this and listen; I hear the call of the *Agelaioides badius*, common name the grayish baywing. Two actually, as one closer to where he was recording, calls, and is answered by another further away. There is traffic in the

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[91] Some examples of these sounds, in the Macaulay Library:

Kaua'i `O'o: http://macaulaylibrary.org/audio/6031

Po'ouli: http://macaulaylibrary.org/audio/5125

Hawaiian Crow: http://macaulaylibrary.org/audio/13434

[92] Aside from his website, Steven Miller had a blog with sound and writing about sound, which can be accessed here: https://sightssoundswords.wordpress.com/about/

[93] The memorial message we wrote at *Sonic Field* for Montero can be found on the site here: http://sonicfield.org/2018/05/manrico-montero-1973-2018/

distance, and at one point a car passes on a dirt road a bit closer to him. The echo to the sound gives us the mountains, the insects give us the summer, and I am present with the recordist, in that moment of recording, in a transcendence I find specific to field recordings. It sounds like the view was impressive. The next track's insects also give us heat, and the sun setting in Llanos de Moxos, a tropical savanna. We hear we are out of the mountains. We are low to the ground, cooling with the coming night. A single bird calls near, somehow mournful with no reply amidst all the sonic emissions around it. Each call has its moment, it sounds like a music composition. I am sensing through Montero's sonic perception and point of view, I am experiencing not just time, but place, from the place and time of his recording. [94]

There is a relationship between the field of biosemiotics and Krause's theories, tied with a history of learning to listen. Biosemiotics is a field that brings areas of semiotics and biology together towards studies of prelinguistic meaning-making–how signs and codes are produced and interpreted, the signification, communication, and habit formation of living processes.[95] Biosemiotics posits that life is based on signs and codes, and that this goes down to a molecular level–copying and coding. Natural selection can be considered copy-based, and natural conventions code-based; signs are fundamental components of the living world. (Marcello, 2008) Montero's work was around the calling and listening patterns in zoosemiotics,[96] and the relationship with the ecoacoustics[97] of a place. We can clearly see the relationship

[94] Some of Montero's recordings can be accessed here: https://soundcloud.com/manrico-montero

[95] Barbieri, Marcello. 2008. "A new understanding of life." *Naturwissenschaften 95*. pp. 577-599. Retrieved December 29, 2019: https://doi.org/10.1007/s00114-008-0368-x

[96] Zoosemiotics is a part of biosemiotics that focuses on the semiotic study of how animals use and create for use signs, animal forms of knowing. It differs from other animal communication fields in that it includes semiotics shared by animals and humans, and cross-species communications, which ties back to Krause's theory and Information Bearing Elements in shared soundscapes. Further reading on this subject specifically can be found here: Martinelli, D. & Lehto, O. (Eds.) (2009). *Special issue: Zoosemiotics. Sign Systems Studies 37(3/4)*: G. Kaplan, Animals and music: Between cultural definitions and sensory evidence, 423–453; K. Kleisner, M. Stella, monsters we met, monsters we made: On the parallel emergence of phenotypic similarity under domestication 454–476; S. Pain, From biorhetorics to zoorhetorics, 498–508; K. Tüür, Bird sounds in nature writing: Human perspective on animal communication, 580–613; E. Vladimirova, Sign activity of mammals as means of ecological adaptation, 614–636; C. Brentari Konrad Lorenz's epistemological criticism towards Jakob von Uexküll, 637–660).

[97] Ecoacoustics investigates the ecological role of sounds, using long term monitoring, habitat health, biodiversity assessment, soundscape conversation, and ecosystem management. Further Reading on this discipline can be found here: Farina, A. (2018) "Perspectives in ecoacoustics: A contribution to a defining discipline." *Journal of Ecoacoustics*. Retrieved August 28, 2020:

from this to Krause's theories of early human's relationship with listening to place forming our sense and language of music. Listening to place forming our sense of Place.

We can see, and hear, how listening to our changing soundscapes can help us perceive and process Climate Change. Climate Change was the more publicly used term when I began the earliest work on the question of: *What can we gather from sounding the past?* There is a literal side to that question–we gather. We search and research and go out and record and edit and archive, and perhaps share. We collect, towards a hope of recollection, and the hope that within that we might perceive what has changed. But what then? Do we want to consider what that means, what compels us to think and feel further? Compelling artistic works that use these recordings to raise consciousness of the problem, to evoke emotion and care and transfer informative context can provoke thought, research, action, and change.

Now some refer to it as Climate Crisis, and it is past subtle changes. For many species and ecologies, it's not a whisper, but a bang before a silencing. The date is right there, as are the recordings. We all witness, in our backyards and through media, all the bangs and silencings. Sometimes we feel bad, or scared, or any of the spectrum of feelings that are appropriately associated with the devastation of our world. But still the hyperobject, this affect only lasts so long. As biodiversity professor Kevin Gaston explains, "humans seem innately better able to detect the complete loss of an environmental feature than its progressive change."[98] (Gaston, 2011)

Timothy Morton employed the term hyperobject in *The Ecological Thought*, to describe "objects" that are massively spread through time and space, so that our perception and specific framing of them is defied. (Morten, 2010, p. 19) Plutonium is an example of a hyperobject, existing on a timescale we can't comprehend. (p. 19) Global warming is a primary example of a hyperobject. Hyperobjects are also places artists often work in; places that have trouble being perceived, the complexity of a place that contains multitudes. (Morton, 2016, p. 12) Morten writes about place in *Dark Ecology*, "Place has a strange loop form because place deeply involves time.

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https://www.researchgate.net/publication/325998314_Perspectives_in_ecoacoustics_A_contribution_to_defining_a_discipline/citation/download

[98] Gaston, Kevin. 2011. "Common Ecology", in *BioScience*, Volume 61, Issue 5, May. pp. 354-362. Retrieved on January 10, 2019: https://doi.org/10.1525/bio.2011.61.5.4

Place doesn't stay still, but bends and twists: place *is* a twist you can't iron out of the fabric of things." (Morton, 2016, p. 11)

Affective artistic works that place these recordings in a context, that make moving artistic works out of them, that create an experience that sits and stays with the one experiencing, this might create something that pushes from experience to thought to action. Recently there was even a New York Times article about composer Erik Ian Walker's work in collaboration with The Climate Music Project, "Climate",[99] which uses scientific data points sonified. Sonification uses non-speech audio to express information. It utilizes and assigns characteristics and qualities to data, such as temporal, spatial, frequency resolution, and amplitude. With auditory perception, it can be possible to as well use that information to create an affective and even emotional composition with the relationships between what the data is addressing, allowing a deeper access and information exchange with the audience. And of course, sometimes that just fails. I will expand on sonification at a later section in this chapter.

In *Specters of Marx*, Jacques Derrida refers to the ghost of the King for Hamlet as a thing of mourning, of trying to make remains present, in their place (archives). This thing, "works, whether it transforms or transforms itself, poses or decomposes itself: the spirit, the "spirit of the spirit" is work." (composition) (Derrida, 1994, pp. 9) It works as simultaneously a repetition and a first time (recording). "Staging for the end of history (presentation and representation). Let us call it a hauntology" (1994, p. 10)

II.4. *Musique Concrète* and the Acoustmatic, a sonic hauntology:

In his introduction to *The Audible Past*, Jonathan Sterne explains his work towards a history of sound through tracing its technologies, and their historical significance, and through them we find an "archive on the nature and meaning of sound, hearing, and listening." (Sterne, 2003, p. 7) Archiving was fundamental to

[99] Knuval, Sheikh. 2019. "This Is What Climate Change Sounds Like." *The New York Times*. Retrieved on March 10, 2020: https://www.nytimes.com/2019/11/09/science/climate-change-music-sound.html

imagining the project of developing sound recording in the late 19th century. However, he describes the recording of voices as a process like embalming, and even canning, where the "outside" of the sound is preserved, but its interiority–its cultural resonances, its intimate meaning, its bodily connections–are lost. And this causes a disconnect, a discomfort, a disembodiment. (2003, p. 12, 26) He seems to ask if it is possible to hear the hearing of others. But that sonic shell (and I do not think it is merely that), shifted into its new context, can embody a new interiority. Remember when inspired by phenomenology, *Musique concrète* composer Pierre Schaeffer first introduced the term "acousmatic" in the mid-1960s to describe the experience of hearing a sound without seeing its cause. In *Sound Unseen: Acousmatic Sound in Theory and Practice*, (2014) Brain Kane writes of the power and use of the disembodied sound; sound separated from its object of emission in time, space, and place. (2014, pp. 75-79) He also points out that the acousmatic experience while allowing no visible access, still allows for striving to identify sources and recognition, which the mind will attempt. (pp. 24-25) Sound is "reduced" to the field of hearing, with the aid of mechanical reproduction and transmission. (Schaeffer, 1966, p. 93) Sound becomes a *sound* object when it loses that ability to signify source, and maintains its *acousmatic* status with reduced listening, where we may hold the ability to recognize source, but we're taking the sound in as something separate from that. (1966, p. 268)

< Figure 5 >

This is the first major study of Schaeffer's acousmatic theory since sound and cinema writer Michel Chion's, *Guide to Sound Objects*, (2009) and Kane's important challenge to the phenomenological stance. Kane finds the acousmatic ails when solely considering electronic music and prefers to define it as a technique that is not dependent on a particular audio technology or medium but splits the senses and makes "the undetermination of a sonic source by its effect palpable". (Kane, 2009, p. 263). The acousmatic sound, in theory and practice, is integral to creative sound design, and I as well use the term to describe the separation in time and place of the sound and its object, whether the emitting object or recorder. Whether a recording of crickets slowed to sounding like a choir, a door slam repeated until pure abstracted rhythm, or the sound of a rain forest over a desert, the effect of that split can create substantial affect in listeners.

In the Introduction to the long-awaited English translation of Chion's *Sound, An Acoulogical Treatise*, (2016) the translator James A. Steintrager describes the whole project as a "hauntology," in reference to Derrida's term, as a "science of sound objects that never fully cohere as such and for considerations that take off from *musique concrète*." (2016, p. xx) I find this in agreement with this thesis position that recorded sound, as its own object, still carries traces of its original event, moment, and passage. Interestingly, hauntology became a term in music to describe the use of sampling, which is of course related to *music concrète* and the acousmatic.[100]

"Sound, once heard, repeats forever in that which one dares not call memory (…) every sound can resound for all eternity in the present perfect of listening". (Chion, pp. 29-30) The "present perfect" of listening is of course changeable, as our sonic perception is personal and relational, so goes our sonic memory. That memory, in its beautiful imperfection, changes the repeated sound with each recollection. Like a recorded sound repeated on loop, the mind with time perceives it differently. Like a recorded sound on recorded tape looped, the material of the medium itself wears with play, and the sound changes. Nothing is permanent, (re)presentation, (re)collection, (re)enactment are signaling their thing from the past, but also are that present. A "performative interpretation, that is, of an interpretation that transforms the very thing it interprets". (Derrida, 1994, p. 63) Hauntology is such an excellent word in reference to sound and its relationship with time, recording, and archives. The use here doesn't seem too far from Derrida's foundational use, from Toop's descriptive use in *Sinister Resonance*, from Chion's acousmatic use in *Sound*. And Derrida's own words himself, "…what we call, to save time and space rather than just to make up a word, *hauntology*." (1994, p. 63)

Researchers and artists Jennifer Heuson and Kevin Allen propose there is knowledge to be gained by the un-linking of the ear and eye, that split of the senses. They propose "asynchronicity" as a challenging method for both anthropologists and experimental filmmakers to employ, a related but slightly different term from acousmatic, in that the sound doesn't necessarily become its own sound object without a perceivable relationship to its source or original context, but separated from that visually it will hold some of the attributes as an acousmatic sound. (Allen &

[100] Music theorist Simon Reynolds adapted the term in the mid-2000's. Reynolds, Simon. *Retromania: Pop Culture's Addiction to Its Own Past.* New York: Faber and Faber, 2011.

Heuson, 2014, p. 113) When the possibility of a synchronous film-sound became a reality, Soviet filmmakers such as Eisenstein, Pudovkin, and Alexandrov wrote statements and manifestos calling for the first experiments in sound-film to be asynchronous with the visuals, leading to "the creation of an orchestral component of visual and aural images. (...) Sound, treated as a new montage element (as a factor divorced from the visual image), will inevitably introduce new means of enormous power to the expression and solitude of the more complicated tasks that now oppress us with the impossibility of overcoming them..." (Belton & Weis ed, 1985, p. 84) In "Asynchronism as a Principle of Sound Film," Pudovkin expands further upon the difference between the technical development of sound, and its development as a means towards artistic expression. He describes film-sound as having the ability to go beyond mere enabling of the ability to enhance "naturalness." He states the first job of sound in cinema is to, "augment the potential expressiveness of the film's content (...) in a more exact rendering of nature than its superficial copying." (Belton & Weis ed, 1985, p. 86)

Allen and Heuson's work with the asynchronous method they describe as challenging "the distribution of the sensible",[101] and the cultural norms of ear-eye relation, changing dynamic experience of time and space. The asynchronous separation of the ear-eye relation places them each in different temporal and special zones, "creating a relation of action-reaction, of randomness or commentary." (Allen & Heuson, 2014, p. 114) The method is meant to explore the disrupted space between the two, creating a meaningful form beyond "data source" and "articulation". (2014, p. 115) They call for an incorporation of both representational *and* sensorial politics, that a study of the senses in relation can better reveal politics of sensing and the link to aesthetic practices. The idea is for forms that make "strange" the relation call attention and thought to that relation, through uncertainty of form and the uncanny. Their films evoke being present, but simultaneously signal the film is an artifact of experience, against (re)presentation of experience. (2014, p. 116) Presence is a production, inviting investigation. (2014, p. 117) An asynchronous approach challenges "historical sedimentation" of more traditional forms of ear-eye relations in

[101] Rancière, Jacques. 2004. "The Distribution of the Sensible." *The Politics of Aesthetics.* (trans. Gabriel Rockhill). London: Continuum

filmmaking, disrupting normalized aesthetics through the asynchronous shift in representational practices. (Allen & Heuson, 2014, pp. 126-127)

II.5. Collections and conclusions: the sonic constellation and the aural rhizome

In his 2010 book, *The Ecological Thought*, Timothy Morton writes about the Pixar animated film, *WALL-E*. (Stanton, 2008) It is the 29th century, and the Earth is rendered uninhabitable, evacuated by the humans who destroyed it. *WALL-E* is a trash compacting robot left for cleanup, he is the only one left still working, he is alone and lonely. *WALL-E* has an interesting glitch within his own programming, he is an obsessive collector, and from his vast embodied archive springs forth a new future Earth, through a seedling. Back here in our world and time, there are already archives of seeds; seed banks to preserve genetic diversity in the case of a global crisis, the Climate Crisis included.

> Yet isn't his obsessive compulsion, so like a manifestation of grief (from where we sit in the cinema at least, spectators to future ruin), exactly our situation right now? How do we begin? Where do we go from here? Is that the sound of some thing calling us from within the grief-the sound of the ecological thought? (Morton, 2010, p. 2)

I've written here of sound and death, of grief and melancholy, and I've written here of sound collecting, of sound gathering. There is a sense of preparation to this work, and to the Wayback Sound Machine. The Wayback Sound Machine comes to us from a place of projected or discovered loss. A lost voice in an archive, or perhaps what may be a future lost soundscape we should archive as well as highlight now. Within my own collecting under this work, there is also a gathering of other works within these themes. This has been called a constellation, which is a beautiful and apt term. This is also part of the rhizomatic nature to this work, non-hierarchical and interconnected, what Deleuze and Guattari used as a term in *A Thousand Plateaus, Capitalism and Schizophrenia*, (1987) for work that allows for complexity without

hierarchy, establishing connections without clear straight lines between starts and stops, with multiple entry ways, composed of dimensions and directions in motion. (1987, p. 6-7, 12, 21) They use an example of a marionette, the puppet strings not just tied to the will of the puppeteer, but the multiplicities acting upon the nerves of the puppeteer as well. (p. 8) Archives are rhizomes, the complexities and connections they contain, how they were formed, extending to their possible uses as well. Like a book, they aren't an image of the world; like a book, the archive forms a rhizome with the world, and can form especially and form further with the artist. (p. 11) They aren't one point in time, they are multiple points in multiple times, like the stars in a night sky, with which lines can be drawn to connection any which way.

I had the privilege during this PhD program period of being asked to become an editor for *Sonic Field*, a journal for sonic arts, sound studies, and listening culture. The bilingual, interdisciplinary network, covering the arts and academic studies, was founded in Columbia in 2016 by merging two pre-existing projects that had been publishing since 2010, and grew to be greatly respected in the sound fields fast. I proposed to them a series based on my thesis project questions and research, as a way to further study and survey, and they enthusiastically accepted. The call went out for proposals for: *Wayback Sound Machine, a constellation of sounding time*. The term constellation was inspired by my mid-program defense, as a description to my project. Poetic, but fit sharply, I'm not trying to draw lines or form boxes, sound studies require an acceptance of complexity, curves, and waves. A scattering, a constellation, a rhizome, a gathering.

II.5.a. *Wayback Sound Machine* in a *Sonic Field*, a curated collection of thoughts and theories on sounding the past

The series published text and media works through 2018-2019, taking advantage as well of the rhizomatic potentials of the internet and digital world, tags and hyperlinks allowing breaks and disruptions of linear forms, connecting lateral and cyclical forms. The series abstract was based on the thesis, asking the questions I was asking to others in the fields. The call reads:

> What can we gather from sounding the past? And with that in mind, what is the relationship between soundscape and sound design?

If the study of acoustics is about sound in relation to **space**, and the study of sound ethnographies and ecologies is in relation to **place**, and the study of sound in affect and phenomenology adds **time**, a soundscape ecophilosophy in relation to sound design can interconnect the whole, the rhizome.

This series will publish and share **various artistic forms and text** of/on sound from the past, and designing and composing sound for the past, to consider what knowledge and applications can be gained from the concept, particularly within a culture and cultural history in which the visual is predominant within a segregated sensory hierarchy in mediating our perception of the world around us. This series proposes that the relationship between our soundscape and sound design can give key information about how we listen, what we listen for, and what that can tell us. The series will show that this information holds benefits and contributions towards many disciplines-including art and cinema, archive studies, ethnography, and ecology-and will investigate through artwork, sound art, cinema, sound maps, practice-based research, case studies, philosophical inquiry, and mapping a new path in sound studies connecting soundscape ecology, sound ethnography, sound art and design, and aural culture.

Artists and sound designers working with and considering sound from the past can create sonic compositions and databases that could help us to remember and feel our heritage. A fluid museum and living archive to give voice to the past and the present, while creating new experience and highlighting information within the complexity of our changing soundscapes, over a period that usually defies our comprehension. We need to sense the world, and we can enjoy sensing the world. Remembering that we aren't limited to just knowing our place in it, but can feel our place in it, allows for a transference and embodiment of information that goes further, goes deeper, creates care and extension of thought beyond our perception of present. Creates empathy,

> expands, and vibrates the interior and exterior. A vibration that affects, and a vibration that joins.
>
> This is a call for a series of publications under this theme and the title, Wayback Sound Machine: a constellation of sounding time. The call and series will be ongoing through 2018 and will begin in the New Year.[102] (Colbert)

I asked, *What can we gather from sounding the past? And with that in mind, what is the relationship between soundscape and sound design?* The first response was "The Call of the Wild", (2018) written by artist and researcher Eric DeLuca. DeLuca wrote about collection, archives, monuments and memorials, Nature, a history of lamps, including the ones John Cage would use. He wrote about the project he made based on the collection of 45-RPM hunter calls, and the first electronic animal caller. He relates this to (re)wilding, and the complexity and complications of the notion–at what point in time do we attempt to turn back to? He relates art to the relay switch, both turn things on and off, disrupts; disrupting the assumptions of history. [103] (DeLuca, 2018) As his editor, I wrote in his introduction:

> There was a point of time in the wild, as the wild was becoming less wild, when listening became not as much an act towards survival, and began to lean towards the aesthetic. It was likely many points in time. I wonder what that timeline would look like next to one of the act of hunting, and when it began to lean towards the (re)creational. Where might they meet? This is one thought provoked of many reading Erik DeLuca's multi-media essay, The Call of the Wild. And listening, time, and hunting, are but three of many themes he addresses; at times conjures, woven together like fibers. We follow DeLuca's list of words with meanings formed with their "re", that timely prefix connoting movement through time…again, back, repeat. Much of this essay is about (re)presentation: a disruption of a history, a transposition,

[102] The series, including this call, can be found here on the journal's online platform. I will also include the call for work in the Annex, p. xvi, and the contributions individually in the footnotes. https://sonicfield.org/author/mailecolbert/

[103] DeLuca, Eric. 2018. "The Call of the Wild." *Wayback Sound Machine, a constellation of sounding* time. Colbert, Maile ed. https://sonicfield.org/2018/06/the-call-of-the-wild/

> a compelling heterogeneous meshing of contexts–recordings, art, monuments, memorials, marketing, wilderness. Time is conjured here, and woven, in this first essay for the series, beginning with a bang of thoughts of time and sound. (Colbert, para. 1-2)

A more personal and intimate response to my questions about sounding the past and archives was from Thomas Park, in "Particular Sounds That Made a Difference." [104] I recognized Park's name from the international phonographer list serve. In this sound-tracked text, we can listen to a past, and experience the soundscape of a home for twelve years, while the author reflects upon what the recordings call up and bring him to. The medium itself, the minidisc, at times gives forth its own time-stamped sounding. Park speaks to the theme of sounding time with an intimate auto-ethnographic voice about an audio archive amassed in a personal limbo. His question to my questions is, "What cultural significance can be found in a series of recordings made long ago in a single urban apartment? In one case, personal significance became cultural–one individual's experience attained a broader relevance." (Park, 2018) Park then shares with us how after his diagnosis of schizophrenia in 1995, he was living alone and without employment in social housing. He began making music based on recordings from and around his housing in sampled collages. For this essay, I invited Park to re-listen to his personal archive, and write while doing so what they call up for him from the past into the present. Because of the digital platform, we were able to publish these writings along with the audio recordings, a soundtrack the reader can experience in "real-time" while reading Park's accounts.

Amidst the proposals I received, the vast majorities were from white men. It's a somewhat-studied non-secret that the art world has an awful track record in diversity. As a university teacher, and an editor for a journal with global reach, I have been trying continuously to use these privileged positions of voice to encourage platforms for other voices. I asked multiple female identifying artists and researchers about the series, and many of them admitted to not having the time to write a full

[104] Park, Thomas. 2018. "Particular Sounds That Made A Difference." *Wayback Sound Machine, a constellation of sounding* time. Colbert, M. ed. https://sonicfield.org/2018/07/particular-sounds-that-made-a-difference-essay-by-thomas-park/

academic essay. I stressed that the call was very open in form, and began to receive less traditional forms of text and media. I decided to create a series-within-the-series of compilations with this work, and the next publications were part of the *Wayback Sound Machine, A sonic constellation compilation*, in three parts.

Opening Part One,[105] researcher and sound artist Suzanne Thorpe, who was finishing her own PhD in sound studies and had studied under Pauline Oliveros, sent an eloquent score called "Sounding Time":

Sounding Time

Listen for a sound you heard in the past

Listen for a sound you will hear in the future

Voice your past and future sounds now, alternating

Repeat voicing for 85 seconds [106]

Portuguese composer Diana Combo's work, *Desacordo*, [107] departs from ethnographic recordings of rural Portugal from the 1970's, made by Michel Giacometti for his TV series. Combo takes this archive and re-mixes, re-composes, and adds her own voice, disrupting time and geography, and adding a power–the Portuguese no longer just the subject. "In Desacordo the dead are resurrected, and the living might return to a time lost, from the sensation of being able to have been there, with those that were once alive and that Fado made forget." (Combo, 2018) I was so taken with this project, I asked Combo if she could contribute to all three parts of the series, which also closes out with her work.

Cellist Helena Espvall shares a film, *Meglio's*, (Espvall, 2018) of her playing hauntingly to the Super 8 images of the reflective window of a long-closed woman's department store, Meglio's, in Philadelphia. The windows reflect the street, traffic,

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[105] Colbert, M. ed. 2018. "Wayback Sound Machine, a sonic constellation compilation." *Sonic Field*. https://sonicfield.org/2018/12/wayback-sound-machine-a-sonic-constellation-compilation-part-1/

[106] Thorpe, Suzanne. 2018. "Sounding Time." In, "Wayback Sound Machine, a sonic constellation compilation." Sonic Field. Colbert, M. ed. Originally composed for Pauline Oliveros' 85 birthday celebration and memorial. The event was curated and hosted by the International Institute for Critical Studies in Improvisation, June 1, 2017, and works exhibited at the Institute for Public Life and Ideas, McGill.

[107] Colbert, M. ed. 2018. "Wayback Sound Machine, a sonic constellation compilation, Part 1." *Sonic Field*. https://sonicfield.org/2018/12/wayback-sound-machine-a-sonic-constellation-compilation-part-1/

cars, and people, of the time of recording. The mannequins, in their fashion of the time, look on, unseeing. Improving musician and poet, Bonnie Jones, who works with electronic sound and text, constructed, "And if I live a thousand lives I hope to remember one", (Jones, 2018) from a live manipulated cassette player and six-minute looping player. The six minutes looped from the source cassette player are recordings from years of performances…recorded, rerecorded…the sound of audio feedback from the proximity of the two eventually takes over the process and event, as well as the personal archive recorded.[108]

Multimedia artist Hilda Daniel's beautiful and intense work, "Echolullia", (Daniel, 2018) is a chorus of broken lullabies representing what is lost in collective trauma. The title is derived from "echolalia", a term for the sound babies make in mimic of those they have heard, or the involuntary repetition of someone else's words. The lullabies are sung by invited Mothers, who chose songs they had once sang to their own children.[109] (Daniel, 2018) Daria Baiocchi composed a work dedicated to Countess Constance Georgine Markievicz, who strongly opposed the 1916 abolition of Dublin Mean Time, and introduction of GMT. The flute in the work was composed to "give voice" to the countess, while rhythmic sounds recall a ticking clock.[110] (Baiocchi, 2018)

Sound producer and theorist Joan Schuman, and Seth Guy who studies language, memory, and imagination at the intersection of audio-visual perception, collaborated on the work, "Intermix". (Guy & Schuman, 2017) Guy would record on video him sounding his body with various objects, this is then sent to the collaborator who would describe vocally what they are experiencing on the video, and record that. Eventually the original videos are not shown at presentation, inviting the audience to imagine what it is the collaborator witnessed, through their descriptions.[111] Sound artist and researcher, Andrea Williams, who also studied under Pauline Oliveros, sent *Riverfront Park Soundwalk*, (Williams, 2016) which is a site-specific artist audio tour of the Hudson River in Troy, New York. It was made with the support of the

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[108] Ibid.

[109] Ibid.

[110] Colbert, M. 2018. "Wayback Sound Machine, a sonic constellation compilation, Part 2." *Sonic Field*. https://sonicfield.org/2019/02/wayback-sound-machine-a-sonic-constellation-compilation-part-2/

[111] Ibid.

Rensselaer County Historical Society in 2016 and is ongoing; the map can be accessed via mobile phone. The participant has the choice of playing a sequence of audio files, or find geo-located sound files, guiding the participants on a route with, "field recordings creating past, present, and future scenarios, mixed with layers of musical elements and interviews with the public and water experts (recorded from 2014-2015) that overlay the actual surroundings as they walk. In the *Riverfront Park Soundwalk*, truth and fiction are sometimes blurred by local mythology. Stories told by residents reveal the beliefs held by the community that shape their connection to the waterways through generations."[112] (Williams, 2016)

Catherine Clover's multidisciplinary practices speak to communication through voice and language, and the interplay between seeing and listening, and seeing and reading. Her, "Score for the arrival of the blackbird in southeastern Australia 1860", (Clover, 2019) traces a path my own work in this project, *Passagiera australis*, (Colbert, 2013) was as well attempting to address. As was written about in the Birth section of Chapter Two, songbirds, like people, learn their voice from their parents, and that voice remains flexible their whole life, adapting their songs to new environments, like human language changes and adapts. "Blackbirds have only been singing in southeastern Australia since 1860, so their voices are relatively recent additions to the biophony." (Clover, 2019) The birds needed to adapt quickly to find their Acoustic Niche. "– amongst the louder native birds such as parrots, wattlebirds, Australian magpies, butcherbirds and currawongs. As a result, in Melbourne today, the song of blackbirds is louder, shorter and slightly less elaborate than the song of blackbirds in London or Berlin, where the birds are native."[113] (Clover, 2019)

From Australia to the United States, Portugal to Singapore, and many places in-between, these artists and authors expressed their own understanding of the questions of sounding time. The exquisite closing essay from Samuel Hertz, "THE BIG BANG and what we left behind (or, hearing loss)",[114] (Hertz, 2019) manages

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[112] Colbert, Maile. 2019. "Wayback Sound Machine, a sonic constellation compilation, Part 3." *Sonic Field*. https://sonicfield.org/2019/04/wayback-sound-machine-a-sonic-constellation-compilation-part-3/

[113] Ibid.

[114] Hertz, Samuel. 2019. "THE BIG BANG and what we left behind (or, hearing loss)." *Wayback Sound Machine, a constellation of sounding* time. Colbert, Maile ed. https://sonicfield.org/2019/07/the-big-bang-and-what-we-left-behind-or-hearing-loss-essay-by-samuel-hertz/

remarkably to provoke and convey the sense of time and its tricks, and how artists use that. I wrote in my introduction: "How time passes, and how time is felt passing, how time is personal and ever changing its costumes and definitions. Within that what is a moment. Within that what is an event. What is shared, and with whom and what else. What is taken away. What might grow. What of all this is perceived." (Colbert, 2019) He opens with a quote:

> *How can sound or words transcribe this imperceptibly slow transformation occurring during every instant and that only an extremely attentive and alert eye can sometimes perceive, the movement of a leaf, a stalk, a flower propelled by the life that makes it grow.*[115]

The quote is from electronic music pioneer Éliane Radigue, who is asking us to imagine an "aesthetics of the infinitesimal", a seeing and hearing that extends into the microscopic (Hertz, 2019) Moments that are ambivalent to impermanence in their scale and transitory nature. Hertz imagines this micro/macro lens as going beyond showing us *what will be*, but also *what once was*. Perhaps the relationship between the two. "Noticing with more clarity—and with greater magnitude—the forces and scales of precarity and disappearance. The range of disappearances I concern myself with involves the gradual occulting of presence: the slow leaks, the centuries-long fade-to-black. In this case, sonorous as well as biological disappearance, the change of soundscapes that accompanies drastic and destructive climate change." (Hertz, 2019)

> *The world never feels fallen, because we grow accustomed to the fall.*[116]

II.5.b. Sonic Rupture and Sonic Rapture, Towards a Sonic Ecosophy in Sound Design:

II.5.b.i. Designing sound into our worldly soundscape

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[115] Radigue, Éliane. 2009. "The Mysterious Power of the Infinitesimal." *Leonardo Music Journal* 19 (December 2009). pp. 47–49. https://doi.org/10.1162/lmj.2009.19.47.

[116] Hertz quotes from Brooke Jarvis. Jarvis, B. 2018. "The Insect Apocalypse Is Here." *The New York Times*. https://www.nytimes.com/2018/11/27/magazine/insect-apocalypse.html

Across decades and disciplines, the term *soundscape* has changed, born out of and shaped by ecology over the years, describing a study of a soundscapes' effects on its organisms and emphasis of ecological characteristics of sounds and their spatiotemporal patterns emerging from landscapes.[117] (Economou et al, 2016) Dr. Jordan Lacey, at the beginning of his book *Sonic Rupture*, (2016) acknowledges the importance and effectiveness of methodologies and practices introduced by the R. Murray Schafer and the World Soundscape Project (WSP) towards listening practices that connect us to our environments and bridge society and soundscape; such as soundwalks, sound mapping, and soundscape composition. At the same time, he expresses frustration with a field that is so critical of the urban soundscape, categorizing its noise as a place of bad health and habit. He states the WSP's acoustic ecology as phenomenological, (Lacey, 2016, p. viii, 3) and thus focused on the human experience; he calls for an approach that considers Affect Theory, which he claims is more inclusive of other bodies' experiences within a soundscape. (p. ix, 3-12) I appreciate this approach very much, but would ask in addition to keep as well the phenomenological, and therefore inward and outward experience and ecologies are considered together.[118]

"By combining affect theory and acoustic ecology, I have come to consider noise as a material that has the potential to augment the imaginative capacities of the human body." (Lacey, 2016, p. xi) Urban noise can indeed be harmful, physiologically and psychologically. Lacey is not disputing this, rather pointing out that all ecologies are affective, some are just more diverse (healthier) than others. (2016, p. 34) He proposes an urban network of sonic ruptures to create affective sonic ecologies, which would be as diversely affective as those found in nature.[119] (2016, p.

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[117] As researched by: Ecomonmou, C., Matsinos, Y.G., Tsaligopoulos, A. 2016. "The interdisciplinary Development of the Term "Soundscape"; Tracing its Ecological Roots." *AEgean Journal of Environmental Sciences (AEJES), Vol.2*. pp. 11-23. https://www.env.aegean.gr/wp-content/uploads/2017/03/Matsinos-et-al_AEJES_2016.pdf

[118] In a separate discussion, (August, 2020) Lacey also noted to me that he feels, "phenomenology isn't so much dismissed by Affect Theory, rather pre-personal affect precedes the personal phenomenological experience; where affect is considered a plane of forces and intensities that precede experience. Phenomenological possibilities are broadened when experience occurs without judgment."

[119] He notes potential only becomes actualized for humans when it becomes perceivable, "passing into the real by affecting the real", dynamically and continuously affecting the real, rendering the real in constant movement. Before the Earth was formed, it was the potential for Earth. "The Earth itself is affective; ; it can be imagined as a dynamic globe humming with potential, out of which all biotic and abiotic entities emerge in a process of creative evolution. Each emergent

50) Noise in our soundscapes is also something that much of the world's human population does not have the luxury or privilege to escape. At the same time, noise in our soundscapes is something non-human urban populations as well do not have the privilege to escape, and are almost always of human-born sounds, such as homogenous sound makers like traffic and climate controllers. (2016, p. 40) Economically struggling areas are plagued with traffic from those who have the means for cars and homes outside of the city, or cars to escape the city when they want to. Industry is often placed near those who cannot raise a voice against it and its many pollutants, including sound. Lacey, as a sound artist, feels that art can have a positive effect on these soundscapes and those people who cannot escape them; he calls this "an affirmation of the power of creativity to alter its affects". (Lacey, 2016, p. ix)

Lacey proposes sound installations as urban public art to create networks of *sonic ruptures* in homogenous urban soundscapes, producing diversity and a space for new experience and new thought. He calls these acts of *affective politics*, which could also be considered acts of counter-aurality. (Lacey, 2016, p. 1, 35) The rupture concept for Lacey was inspired by Felix Guattari's *Three Ecologies* (2008), which also alerts to the unhealth of homogenous environments, and introduces the term "ecosophy", which consists of three ecological registers–the environmental, social relations, and human subjectivity. Guattari notes "at the heart of all ecological praxes there is an a-signifying[120] rupture." (Guattari, 2008, p. 19; Lacey, 2016, p. 16) Lacey takes this as providing possibilities for connection of the body (both social and individual) and the land, through sound works that disperse fixed, homogenous, everyday sounds (such as what a commuter may be exposed to at the same time and place day after day). This allows for changes to everyday existence to emerge, which might impact positively on social health and well-being. (2016, pp. 16-17) "Social ecosophy will consist in developing specific practices that will modify and reinvent the ways in which we live (…) reconstructing the modalities of 'group-being', not only through 'communicational' interventions but through existential mutations driven by the motor of subjectivity." (Guattari, 2008, p. 34) Guattari then calls for the

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entity affects (and is affected by) the ecologies in which they are enmeshed, including all of humanity's present moments (synthetic, technological and urban)." (Lacey, 2016, p. 50)

[120] As in, the absence of signifiers. (Guattari, 2008, p. 19)

implementation of "effective practices of experimentation." (Guattari, 2008, pp. 34-35)

Referring to Rupture, Lacey quotes in his Introduction:

> Our typical ways of being in the world are challenged, our systems of knowledge disrupted. We are forced to thought. The encounter then operates as a rupture in our habitual modes of being and thus in our habitual subjectivities. It produces a cut, a crack. However this is not the end of the story, for the rupturing encounter also contains a moment of affirmation, the affirmation of a new world, in fact a way of seeing and thinking this world differently.[121] (O'Sullivan, 2006, p. 2; Lacey, 2016, p. 1)

Approaching the soundscape in much the same way one might design sound for a film, along with artistic addition, Lacey also proposes a method of Subtraction. Subtraction is not just about removing a dominant unwanted sound, but revealing sounds that may be masked by them, "bringing out attention to the moment." (Lacey, 2016, p. 155) Methods such as subtraction have the benefit of application to urban soundscapes already being lived in, but as Lacey sites, the reality of a soundscape designer finding a way to achieve this usually renders them referring solely to the addition approach (with adding soundwalls and other shields, acoustic sculpture, etc.). (pp. 76-80) Urban planning, or any sort of social infrastructural planning, that considers sonic problems from past choices, especially found disproportionally in lower income communities, and hiring soundscape designers that consider the aural affects and impacts of these future communities, could be an example of a massively affective counter-aurality. We culturally accept and expect the lower income neighborhood's soundscape of concrete reverberation, traffic, construction and industry, and emergency sirens. We even design our cinematic sound to reflect, amplify, and repeat the same; an example of Mirzoeff's *anaesthetics*, we learn this is the sound of Urban.

Lacey's network of sonic ruptures could have the positive effects of enriching the soundscape of urban areas, and simultaneously calling attention to them. Lacey

[121] O'Sullivan, Simon. 2006. *Art Encounters Deleuze and Guattari: Thought Beyond Representation*. New York: Palgrave Macmillan

sited the transformative experience of listening to these spaces, experiencing these spaces as an "affective sonic ecology", (Lacey, 2016, p. 34) and allowing that information and influence to guide his work. "This was another pivotal point in the creative practice research process, when myself-as-musician and the city-as-music begin to interconnect as an ecological interrelationship, where the city plays me and I play it back." (Lacey, 2016, p. 85) Enriching soundscape while calling attention to them, to what is there and what is missing, challenging ways of being in the world, disrupting our usual systems of knowledge and structures we may fall back on, and pushed to thought...this is what the *Wayback Sound Machine* strives for with its ruptures to time and archives. Cinematic soundscapes in current mainstream film formulas become homogenous in loudness, the characteristics of their design increasingly towards a sensational and expected affect, to be left in the theater when the film is over, perhaps even in mimic or symptom to what is happening in our urban and suburban soundscapes: anaesthetics. The attention and activation of the Wayback Sound Machine's questions, concepts, and methods seek to also create *affective sonic ecologies* in creative sound design, and *sonic ruptures* in our sound archives.

II.5.b.ii. Allowing our worldly sound into our sound design:[122]

Guattari also writes on the connection of the social ecosophy to the mental ecosophy, which will, "lead us to reinvent the relation of the subject to the body, to phantasm, to the passage of time, to the 'mysteries' of life and death. He states this will encourage us to finding "antidotes to mass-media". (Guattari, 2008, p. 35) Considering the connections between his ecologies and ecosophies can be a method to consider the connections between listening to our soundscapes, and our counter-aurality sound designs and *affective sonic ecologies*…connection as well as application. In the previous section we explored the concept of considering the sonic design of a soundscape, in this section I will flip that, and explore the soundscape in our cinematic sound design. I will explore, at times critically, the relationship of Werner Herzog's films, and specifically their sonic elements, to the various biomes he shoots in, focusing on six of his films, almost all documentaries. Within this, we will

[122] Excerpts of the following sub-chapter were published prior: Colbert, M. (2017-2018) "Cinema e Procura: Uma Natureza no Som e Visão de Werner Herzog / Cinema and Seeking: A Nature in Werner Herzog's Sound and Vision." animalia vegetalia mineralia: ecomedia, ecocinema, ecocriticism, no. IX, 2017-2018. https://animaliavegetaliamineralia.org/ecocinema/

delve further into nature as place, and further on when comparing and considering filmmaker Apichatpong Weerasethakul's sound design and soundscapes in his films, we will also consider the sound of place and time. The launching point for the discussion about Herzog and his relationship to nature through sound is inspired from and follows the Fata Morgana interview article, *Being Exposed to Nature: A Conversation with Werner* Herzog.[123] (Dottorina, 2008)

The importance towards giving, allowing, or amplifying voice to place is a theme throughout this thesis, and in that spirit, I want to speak of my own place in regard to this writing–part of my interest in critiquing Herzog's work is my interest and respect for him as a filmmaker. The points I will be critiquing are, as I will discuss, very affective. Another way to put this is, they work on me in the way I believe the filmmaker means them to. But when this happens, I am simultaneously aware, and critical, because I also know what might be missing, what was not sounded, and I feel that is important to consider.

This bridges into the second part of the chapter section where I discuss the work of filmmaker Apichatpong Weerasethakul[124] in comparison and contrast, as a filmmaker who does allow place and soundscape to speak, or gives or amplifies voice of place, and the ways in which this is successfully used in his work, especially towards aspects of magical realism which often brings in time, as this is usually explored in relation to a mixing of his own memories, stories, and mythologies of the place. These are two exceptional and prolific filmmakers working with sound in very different methods, and it seemed beneficial to the thesis to have a section of comparison and contrast. I will describe these methods, write critically about them and apply my recent research.

Part One: We're in Wisconsin, and the bank robbery went wrong. Bruno walks into an amusement arcade, empty of other humans and filled with animals in themed cages, trained to do a thing over and over again. A coin enters a slot, a rabbit

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[123]Dottorini, Daniele ed. 2008, 2016. "Being Exposed to Nature, A Conversation with Werner Herzog." *Cinema, Thought, Life: Conversations with Fata Morgana ("Fata Morgana", Nature, No. 6, 2008)* p. 127. DOI: 10.1400/250648

[124] According to Thai naming customs, a person is respectfully addressed by their given name, rather than surname, and so I will refer to this filmmaker by Apichatpong from here on out.

"plays" piano. A coin enters a slot, a chicken dances…over and over, again and again. The room is filled with a maddening sound composition, made hysterical by the sonic take-over of harmonica and yodeling. When asked about this famous ending to his film *Stroszek*, (Herzog, 1977) Werner Herzog himself said he felt it was a powerful metaphor, but he couldn't say what for.[125] His relationship with chickens, an oddly ongoing theme in many of his films, has often led to one of two streams of analysis– chickens represent the worst aspects of human nature, or chickens represent the most terrifying aspects of Nature. Two streams that rarely come together, and yet perhaps this is representative as to why Herzog felt his dancing chicken was a perfect metaphor, but for what he couldn't say–perhaps an allowance for complexity to break the duality we often jump to in our organization of ecologies dealing with Us and Nature.

Timothy Morton urges that we break from our romantic notions of Nature with his theories of a *Dark Ecology*, (2016) which he compares to film noir in form– where the protagonist may feel neutral in their assessments and investigation, until they realize they are implicate within it. (2016, p. 111) Morton might seem somewhat in-tune with Herzog's assessment of Nature, stating often that a more relevant and realistic ecology–and ecological art–doesn't view ecology through a "rose-colored glass", but expects, accepts, and even thrives in the dark mess and mesh. But his philosophy on the subject would also apply to the pendulum swinging the other way and find critique in Herzog's "Us versus Nature" statements. In fact, Morton does critique Herzog's depiction of Treadwell's perspective in *Grizzly Man*, (Herzog, 2005) stating his, "…view of animal indifference and cruelty is as mistaken as Treadwell's view of animal sympathy". (Morton, 2016, p. 75)

Nature can be and has been defined as life, living, the physical world, the natural world, the material world, the universe, geology and wildlife, the kingdom of plants and animals, the wild, wilderness. The natural versus the artificial; humankind is part of nature, but often spoken of as separate. Many contemporary ecologists have sited this to being a large contributing factor to different ecological problems, and potential as well as ongoing disasters. *Natura* in Latin meant "birth", and could also refer to essential qualities, an innate disposition. That is translated from the Greek

[125] Ebert, Roger. 2002. *Stroszek Review.* para. 11. Retrieved May 13, 2016: https://www.rogerebert.com/reviews/great-movie-stroszek-1977

physis: relating to the intrinsic characteristics that beings of the world develop on their own. Aristotle considered *physis* to hold multiple definitions, with multiple means towards interpretation. He felt nature contained, innately, its own source of "the four causes": matter (or material), power/motion (efficiency), form, and end (or final). He felt nature was dependent on art (or techne).[126]

> The critical distinction between art and nature concerns their different efficient causes: nature is its own source of motion, whereas techne always requires a source of motion outside itself.[127] (Atwill, 1998)

Two important forces of the world, that which holds its own motion, and that that needs it created. Human's hold both, and often feel the two are at war, internally or externally, such as cutting into a forest to build. Deleuze speaks of Herzog's films:

> (…) the action divides in two: there is the sublime action, always beyond, but which itself engenders another action, a heroic action which confronts the milieu on its own account, penetrating the impenetrable, breaching the unbreachable. There is thus both a hallucinatory dimension, where the acting spirit raises itself to boundlessness in nature and a hypnotic dimension where the spirit runs up against the limits which Nature opposes to it." (Deleuze, 2013a, p. 205)

Herzog's relationship with that nature, as we can perceive from both his narrative and documentary films' characters and subjects, is a complicated one. This is a fascinating aspect to his work, revealing and ongoing though his oeuvre. My own relationship to his work is complicated as well and seems in constant flux between a sort of agreement and a desire to argue. The primary contributing factor for this provocation is his use of sound, which can illustrate his complications with nature, both human and capital "N". It seems prudent to write of this relationship as an example that represents a classic, ongoing, and increasingly problematic relationship with nature.

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[126] Hankinson, R. J. 1998. *Cause and Explanation in Ancient Greek Thought*. Oxford: OUP Premium, p. 159. Retrieved January 5, 2017: doi:10.1093/0199246564.001.0001, ISBN 9780198237457

[127] Atwill, Janet. 1998. "The Interstices of Nature, Spontaneity, and Chance." *Rhetoric Reclaimed: Aristotle and the Liberal Arts Tradition*. Ithaca, NY: Cornell UP

In filmmaker Les Blank's 1982 "making-of" documentary *Burden of Dreams,* (Blank, 1982) a behind the scenes film of the production of Herzog's *Fitzcarraldo*, (1982) and arguably one of his most famous films for both the sublimity of the film itself, as well as the many myths and stories surrounding its creation; a peak in the emotional curve of the film happens when Herzog is asked to speak about his feelings towards the jungle and towards the nature him and his crew were currently engulfed in. In fact, this "speech" had been already made, prior and candid, on a canoe.[128] Blank found it so revealing, he asked if Herzog could repeat it, but this time within both the image and sound of the jungle he speaks of, surrounding him. As Herzog completes his statement on the violence of nature, describing it as "grandiose" and "suffocating", gently the voices of the jungle itself creeps up, like the vine sharing–or perhaps fighting for–the screen with him. The non-human sounds take over; Herzog finishes his sentence at an equal volume as the jungle, which then takes over with its otherworldly soundscape, or what will sound otherworldly to many in the film's audience. It is an interesting choice. An interesting and telling choice; perhaps telling of Blank's feelings at the time of the production, and the production's declaration of war with the jungle. While there is an element of acting and sensation to Herzog's performance for the camera, there is a revelation of his own feelings to wilderness, of what is uncontrollable and what humans cannot understand.

The interviewer from the article in Fata Morgana asks him about limits, specifically "the theme of nature as human limit". (Dottorini, 2008, p. 2) Herzog does indeed seek limits with his theme, and he also seeks those who seek limits as subjects within those environments. In this way each film is a reflection of his seeking, his pushing, and his battle with his own nature. He answers the interviewer that "Our planet is insignificant…the story is insignificant: this is our natural limit. First of all, it is a spatial limit". (Dottorini, 2008, p. 2) But cinema, and sound, carve out space and time, and within that we can give significance to our stories. Time is relative; a human life span is an eternity compared with many much smaller species. This is one of the perspectives we can consider when we consider the natural world, and consider that we, including all our artifacts and destructions and creations, are a part of that. Much like he does not trust nature, in his own words, he seems to not fully trust his

[128] Pearson, Jesse. 2009. "Les Blank." *Vice*. Retrieved April 21, 2016: https://www.vice.com/en_us/article/avjgbk/les-blank-127-v16n9

audience. He controls every aspect of expression, weaving the story he wants us to receive, and making sure his message is transferred.

"We are going to listen to the silence in the cave, and perhaps even hear our own heartbeats", the guide says, asking for silence from the group in the Chauvet caves of Southern France, at about eighteen minutes into Herzog's, *The Cave of Forgotten Dreams*. (Herzog, 2010) The character speaks of sound, asking for an active listening to the cave. He looks to the camera, inviting the future audience to join and listen to what he calls the silence of the cave–though true silence does not exist in our world, our landscapes are always sonically active. Silence is mostly a concept; our soundscapes always speak. Even in this instance, his goal of silence is towards hearing our own human heartbeats. But still, we do hear the cave and its depth of time and space…for a moment.

The cave soundscape is not allowed to speak for long, as Herzog pulls the music back in, drowning out the delicate ambience, only allowing dripping water to occasionally penetrate his composed world. The music tells us to feel, and how he wants us to feel: contemplative, and focusing on those humans inside this cave. Thinking about time, of human time and lives and dreams. It is not wrong, but it is also not the soundscape those on screen are experiencing. We could have a chance here to hear the past, but this is not Herzog's focus. What Herzog wants us to feel about time is a crafted sublime. But a chance is being missed in that cave, with those images. It is being studied and argued that it is very likely that many, if not all, of these ancient cave painting sites were chosen for their acoustic properties, early audio-visual work in conjunction with the images. For example, in the caves of Lascaux and Font-de-Gaume, bison and bull were often painted in caverns and chambers with the most intense and unique acoustic characteristics, with strong echoes creating percussive sound, like many hooves running. (Blesser & Slater, 2009, pp. 73-76)

There are many similarities with *The Cave of Forgotten Dreams*, (Herzog, 2010) and *Antarctica: Encounters at the End of the World*, (Herzog, 2007) made three years prior. Often in experiencing the most intense landscapes in the film, we are flooded with a musical vocal composition that seems to drown out the landscape itself–entering our reception and pushing us to feel a certain way. It's as if the vocal music is taking over and speaking for the landscape, translating its power. It is an

opinion; it feels like Herzog's perspective and feeling. We go underneath the ice in Antarctica to witness a sublime underwaterscape–partially flowing, partially frozen. He wants to match an otherworldly visual with an otherworldly audio, in this case a Bulgarian folk song about a mountain, "Planino, Stara Planino".[129] But that detail of origin isn't important–perhaps assuming most of his audience will not be familiar with the song, the language, the technique that the otherworldly plus otherworldly will have an additive towards sublime affect. But what are we missing out on? When we soundtrack the "natural" world with artificial heartstring-pulling compositions, are the artistic questions that could and should be considered also ethical questions?

There are a few points where we have a chance to listen, such as when we join the team of scientists and researchers to listen to the calls of the Weddell Seals through the ice. Again, we have characters speaking of sound. We have a rare moment to hear the Weddell seals and underwater recordings,[130] and then we are swallowed by music again, separating and distancing us from the frame. I argue that in moments like this one, collaboration with the soundscape could lead to further and deeper immersion into the film for the audience. If we manage to break through the duality of Human and Nature, and can see the threads that tie and connect, we could hear–and sense–the relationship between the soundscape and sonic composition.

< Figure 6 >

Anthropologist and ethnomusicologist Steven Feld has researched and theorized about the relationship between sound, sense, and place for decades, and the symbolism of sound as distinct from voice and music. In his book *Sound and Sentiment: Birds, Weeping, Poetics, and Song in Kaluli Expression*, (Feld, 1990) written about his sensory ethnographic studies and time spent living with the Kaluli of Bosavi, Papua New Guinea, Feld writes how the Kaluli "rationalize nature's sound as its own, then 'turns it over' to project it in the form of what is "natural" and what is "human nature". This is the link between a perception of a sensate, lived-in world and the invention of an expressive sensibility." The Kaluli feel themselves aesthetically

[129] Dragostinov, Stefan. Performed by The Philip Koutev National Folk Ensemble.

[130] Recorded by Douglas Quin, a sound expert and professor at Syracuse University, who was there with Herzog on the Antarctic National Science Foundation's Antarctic Artists and Writers Program as well.

"in it" and "of it" when it comes to nature, they are a part of an expressive flow and "world-sense" that links bird sound, weeping, poetics, and song together inextricably, at all times and places. (Feld, 1990, p. 268)

< Figure 7 >

Again, from *Burden of Dreams*: (Blank, 1982) "And of course we are challenging nature itself. And it just hits back, it hits back…" He often uses the language of battle when referring to nature. "These birds are in misery, I don't think they sing, they screech in pain." Herzog speaks of chaos, an anti-harmony, but admits to an organization. This can bring us back to Krause's biophony, remember where non-human organisms adjust their vocalizations by frequency and time to find its niche in the soundscape, thus each species evolves to establish and maintain its own acoustic bandwidth so that its voice is not masked. (Krause, 2012, pp. 68-69)

< Figure 8 & 9 >

As mentioned in the first chapter, Krause theorizes this could be the origin for human's sense of composition, listening to the biome, listening to these soundscapes. We can take the theorized origins of a sense of composition and that relationship to our soundscape, and apply towards sound design and composition. We can blend the layers of the recorded soundscape, "turn it over" with our expressive sounds, creating a more grounded, yet more expanded and powerful sonic expression, carrying with affect sensorial information and expression. (Feld, p. 265) If we take away and fill with music solely, we are taking away from a complexity, and an opportunity towards further communication. Feld writes of the Kaluli concept of "lift-up-over-sounding": "Unison or discretely bounded sounds do not appear in nature; all sounds are dense, multilayered, overlapping, alternating, and interlocking"–a dense and complex soundscape, conveying a sense of synchronicity and togetherness of sound, a participation of sound sources, sonic textures "disperse, pulse, rearrange" in a sonic motion that "flows". (Feld, 1990, pp. 264-266).

The perception of soundscapes is also about design and composition, and so can also be about filmmaking, especially with films regarding the "natural" world, and especially with films regarding humans in the "natural" world. There is an opportunity, and again, sometimes arguably even ethicality. In the interview they speak of "rising", as there is an ongoing theme in Herzog's films, with other limits, of

the ability to fly: “Rising is another way of observing nature’s extension, maybe even getting away from it…” (Dottorini, 2008, p. 5) And sound is one of nature’s extensions, as well as one of cinema’s. The human and cinematic limits that the interviewer and Herzog tend to speak of are based in the visual and the essence of the visual. But sound also plays a crucial role in transmitting an experience from most time-based media. If the role of the cinematic montage is to make one plus one equal three, imagine the infinite addition that complex soundscapes can contribute.

In *The White Diamond*, (2004) the protagonist speaks of a desire towards flying as a desire towards a sonic peace, a chance to think. His version of silence is a calming of the mind, of what haunts him. He equates the idea of silence as an ideal, part of the achievement of the dream. I appreciate that Herzog gave him a chance to relate this with the soundscape of the jungle behind him; but then, once again, he takes back the moment with his musical instruments, and we aren’t allowed to listen to what the character is listening to. His relationship to sound is about control, much like his relationship to what we are calling nature. He uses conventions in soundtracks, albeit very well, to let a Western audience know how to feel and when, to guide and to manipulate–which to be fair, is a large part of the role of sound in cinema.

Herzog may not trust human nature in the end, but trusts himself as a sort of buffer or mediator–he will experience, and then decide how that should be translated and transmitted to us. On *Grizzly Man*, (2005) he says in the interview article, “Naturally, what was immediately clear was the fact that the perspective on nature was absolutely contrary to mine…and this type of tension, this type of friction, I think, is a positive aspect in the life of the film.” (Dottorini, 2008, p. 4) The contrast of Treadwell’s videos, with their in the moment captured soundscapes, creates a powerful voice that lends a counterweight–important to attempt balance to Herzog’s experience of craft fueling his perspectives and, especially in this film, sometimes very strong judgments.

Then, a last shot with a wild wind sweeping violently long grass and brush, in which an equally wild and earnest Treadwell stands in the middle, speaking to us/the camera, through Herzog’s film and from the past, the recording devices adding their audio-visual timestamps. He speaks candidly of his love for his work; the wind carries his voice to the camera. “He seems to hesitate in leaving the last frame of his own

film," (Herzog, 2005) Herzog says at a moment when Treadwell is not speaking, keeping the soundscape still low behind him, a murmur from the past. "It's the only thing I know. It's the only thing I want to know," (2005) Treadwell states with a smile. He goes to turn off the camera, then is for a moment sidetracked, clearly listening…for a moment just listening to his beloved land. Herzog's closing monologue is over further footage Treadwell has taken, of the bears playing by the seaside. He leaves the soundscape once again in the background, allowing the past to speak with him in dialogue, allowing it to have a weight on his words of what is gone and what remains: "A thought becomes more and more clear, this (footage) is not so much a look at wild nature, as it is an insight into ourselves, into our nature." (Herzog, 2005) This moment in the ending is a beautiful convergence of the two voices, and one of respect from Herzog's side.

Continuing a theme of limitation, the interviewer asks: *Does cinema need to find an image which otherwise exceeds the limits of the visible, or is it something else?* (Dottorini, 2008, p. 2) Sound with cinema can do that, does do that, pulling the immersive world outside the borders of the frame to surround us. Herzog answers: "Those images are about a search which is integral to cinema; I think. I think that through films we can transmit basic sensations. (…) I think that in some of the movies, it was about giving the audience the possibility to *feel* the interior spaces, the most *invisible* spaces." (Dottorini, 2008, p. 3) I do not doubt that this is possible with cinema, and the cinematic sensorial experience, in fact part of my argument here is that cinematic sound with image transmits complex sensations, layered, many creating affect under a conscious level.

This calls to mind again Steven Feld's writing on the Kaluli "lift-up-and-over-sounding", the acceptance of the complexity of the soundscape and the information and sensations that brings us– "the soundscape evokes 'insides' *sa*, 'underneath' *hego*, and 'reflections' *mama*. These notions involve perceptions, changes of focus and frame, motions of interpretive access to meanings packed into layers of sensation…" (Feld, 1990, p. 266) The experience of listening to the external, translated in the internal–the filmmaker and sound designer must map out this path, scene-by-scene, sensation-by-sensation.

The interviewer says: *Nature as a limit*. Herzog answers, "Certainly, but once we accept this, we also have to admit that, on this planet of ours, we can still

experience enormity, the vastness, of seemingly borderless space." (Dottorini, 2008, p. 5) One can sense this urge and seeking with Herzog's films, this expansion and outward motion towards a sensation of the world so large it could crush you with the weight its experience. He wants to capture this, and where he feels that comes up short, he wants to create this, and where that won't do, he seeks others that seek the same. And sound does just this for cinema, expands out past the screen and visual borders, surrounds and enters. Sound can place us, when woven with story and image, in the jungle, under frozen worlds, in prehistoric caves. Sound transcends time and space, and sound can give meaning to and create Place.

Herzog is a filmmaker that immediately comes to mind when asked to consider film and nature, and a filmmaker's relationship to Nature. Clearly this thought is shared with the Fata Morgana interviewer. Another filmmaker that comes to my mind regarding these themes is Apichatpong Weerasethakul, and it is worthy and revealing to consider the two filmmakers together, and their different sonic approaches to landscape and soundscape.

Part 2: In the interview, Herzog speaks of the insignificance to our story, that this is a natural limit. (Dottorini, 2008, p. 2) But cinema carves out a time and space to give significance to our stories. Herzog continues that from a distance our world is a "miniscule grain of sand". (Dottorini, 2008, p. 5) But the whole of the world can be seen in a grain of sand,[131] and for me this represents the cinema that Apichatpong Weerasethakul creates, rendering the hyperobject of the world, into a new world that represents as a sort of heterotopia. Like in Foucault's example of a mirror to describe this term, *heterotopia*, as a space that is both real and unreal, of this world but otherworldly, relating with the space around it as an object, yet a virtual image.[132]

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[131] "To See a World..." fragments from *Auguries of Innocence*:

To see a World in a Grain of Sand

And a Heaven in a Wild Flower,

Hold Infinity in the palm of your hand

And Eternity in an hour.

[132] Foucault, Michel. 1984. "Of Other Spaces: Utopias and Heterotopias." Architecture /Mouvement/ Continuité October, 1984. trans. Jay Miskowiec. Retrieved June 25, 2018: https://web.mit.edu/allanmc/www/foucault1.pdf

(Foucault, 1984, p. 3) Sound helps extend and connect the "object" of the screen, to the space of the audience. In the way Herzog's films go outward, seeking sublime limits and borders to come up against in place unknown, unfamiliar, otherworldly– Apichatpong's films have an intimacy of the internal, to the point at times uncanny. They create a space that feels known to the director; known so well, with such experience, their expression can also express internal states of the human within them–dreams, fantasy, and myth: magical realism. Place is known so well, so sensorially, its transmission to and through the screen and speaker to audience transcends the internal. Where Herzog is macro, Apichatpong is so supremely micro– whole worlds are seen in a grain of sand, and we are immersed in the soundscapes of his childhood, both memory and dreams. Apichatpong has said himself, often, that his audience should at times experience his films while asleep. When we sleep, sound continues to enter us and be processed, blending two states. We have no "ear-lid" to close off to the world.

And this is the feeling we can get experiencing his 2006 film, *Syndrome and a Century*. (Apichatpong Weerasethakul, 2006) In the first half we are surrounded by the soundscape of his childhood, a hospital in rural Thailand, him having grown up with both parents' physicians in such a setting. Allowing place to speak in cinema also allows and accepts complexity, and the film that was originally about his parents absorbed elements of location and his actors, weaving with his own memories. In an interview he said, "When I met the actors, when I found the location, there were other stories combined and added in. I try not to limit it. I allow it to flow whichever way it goes."[133] (Pansittivorakul, 2006)

The film begins aurally, carrying us with an ambient musical drone that blends and seems to transform into the sound of wind through the trees we look upon in the first visual shot. When we cut from the trees to character, there is no change in the soundscape, and it continues its strength to the next character, giving us the sense of listening to what they are listening to, connecting them through sound, so we are that much more embedded when they are spoken to, creating a strange sensation–the aural

[133] Pansittivorakul, Thunska. 2006. "Conversation with Apichatpong Weerasethakul," *Criticine*. April 29, 2006. Retrieved November 3, 2017: http://www.criticine.com/interview_article.php?id=24

POV [134] of the characters spoken to, but the visual POV of the person asking the question. Chion calls this, *point of audition* (POA). (Chion, 1994. p. 90) At the point when we are allowed to pull back and see both characters interact with each other, and we are once again the audience, we also see that while we are in an interior, the windows are open to the exterior, and the sound of the exterior. This is a device that reoccurs often through Apichatpong's films, the frame of the window from internal to external, the soundscape crossing that border, a mix. His architectural background may have led him to this relationship with space and place sounded–how sound crosses over, enters and immerses–whether the frame of a window, or the frame of a screen. Transformation through immersion itself goes back to the prehistoric–cave paintings, architecture and bizarre acoustic spaces and temples–audio and visual special effects already being used to create a metaphysical transformation and altered state. It is a utopian idea, transporting the observer into the image, nullifying the distance of the image space and intensifying illusion. (Grau, 2003, p. 348)

Transformation relies on a comfort and letting go towards immersion. "The new is made comfortable by being made familiar, since it is seen as having gradually evolved from the forms of the past."[135] (Krauss, pp. 30-44). We are comforted by perception of sameness, to a certain extent. The 'uncanny valley' concept in aesthetic acceptability is when a simulation of a human with a near-identical resemblance to the real arouses a feeling of unease or revulsion.[136] When graphed, there is a sudden drop after a climb of positive feeling, empathy, and acceptance that is correlated to the anthropomorphism of the simulated human. I will return to the aural uncanny valley in Chapter Three further on.

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[134] A "point-of-view" (POV) shot in cinema is a shot or scene that shows what a character (the subject) is looking at, represented through the camera. Sound can have a POV as well, when we experience what a character is listening to, which is often in conjunction with the visual. We are set up for the POV by seeing the character listening, which is exampled in the prior Herzog scenes written about in this thesis.

[135] Krauss, Rosalind. 1976. "Video: The Aesthetics of Narcissism" in *October,* Vol. 1, New York

[136] Masahiro Mori introduced the term in a paper from 1970 from the Tokyo Institute of Technology. It initially was published in a small journal called, *Energy*, but was ignored for years. The complete version of the original essay can't be found, but this is an English version that was reviewed and authorized by Mori:
Mori, M, MacDorman, K.F., and Kageki, N. 2012. "The Uncanny Valley [From the Field]," in *IEEE Robotics & Automation Magazine*, vol. 19, no. 2, pp. 98-100, June 2012. Retrieved April 26, 2015: doi: 10.1109/MRA.2012.2192811

In the short film *Phantoms of Nabua*, (2009) Apichatpong and sound designer Akritchalerm Kalayanamitr, whom Apichatpong works with often, reach a powerful conjunction of sound and image, using once again the theme of frame, expanding the macro and micro simultaneously. Once again, a vigorous effect of an aural uncanny valley, the emitting objects of what we witness on-screen visually–wind, wind in trees, night creatures sounding in the distance, and even the surprise of the ghostly lightning strikes–but with qualities different than what would be expected. Low fidelity, they sound re-recorded, perhaps when the actual re-scanning of the screen was happening. This deceptively simple choice creates an other-worldly state, a sense of distance and at the same time being under; dislocated as the information we are picking up from listening isn't telling us where, but rather creating a new where, a where that exists outside our physical laws. The affect enhances the macro/micro sensation. In the end, the screen has burned, and we are left with sound, smoke, light, and a frame. The skeletons of production lay out before us–amongst many other themes, this is a film about filmmaking. It plays like a dream about filmmaking.

Sleep and dreaming are reoccurring themes as well in films of Apichatpong. A description of the sensation of listening to the soundtrack to *Phantoms of Nabua* (2009) could be the experience of listening when close to asleep. In *Cemetery of Splendor*, (2015) the film opens with the aural POV of the sleeping soldiers. The screen is black, and we hear disembodied sounds, some impossible to place. The use of soundscape with dialogue throughout *Cemetery of Splendor* (2015) creates an unusual perspective, in conjunction with slow reveals in the narrative, sustains a continual dream-like state, but definitely not neutral. As the film moves forward, this allows an enhancement of a sense of accumulation, turning frenzy when the sleeping soldier's lights spill out into the town. A closing shot at the end towards the sky, in it a paramecium floating, the macro and micro together, the external and internal, our world's limits we can only dream and create out of.

Herzog wrote, "Mother Nature doesn't call, does not speak to you." [137] But you can listen, there is information there. You can allow and encourage your audience to listen.

Now I will do nothing but listen…

I hear all sounds running together, combined, fused or following,

Sounds of the city and sounds out of the city, sounds of the day and night…[138]

II.5.b.iii. Sounding Our Crisis, Part 1:

In 2011, the disastrous Tohoku earthquake and tsunami devastated Japan. Within its horrific footprint, several nuclear accidents affected hundreds of thousands of residents with radiation levels up to eight times what are considered normal. Many other radioactive hot spots were also found outside the evacuated radius, including within Tokyo. All over social networks, people posted photos, videos, and sound clips of their Geiger counters reading the radioactivity in their homes and neighborhoods. The process a Geiger counter uses is called sonification, a form of auditory display that uses non-speech audio to convey information. Sonification is an old technique– the Geiger counter dates to 1908–but only in the last decades is it becoming more spoken of and has begun to bridge areas in art and science. It is defined as non-speech audio being used in a correlative manner to perceptualize data and convey information.[139] As I played a sound file from a friend of the above-normal readings in his kitchen in Tokyo, I was unnerved by the ominous, staticky click, like the chirping of some robotic insect, but recognized immediately with decades of cultural aural association. Nothing sounds like a Geiger counter, really, except a Geiger counter. It is a sound that hadn't existed before it was created to signal danger. In fact, the entire event was sonically terrifying. Some of the most chilling recordings I heard from the

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[137] Herzog, Werner. *Minnesota Declaration: Lessons of Darkness*, sentence number 10. Walker Arts Center Magazine. Retrieved February 3, 2015: http://www.walkerart.org/magazine/1999/minnesota-declaration-truth-and-fact-in-docum

[138] Whitman, Walt. 1819-1892. "Song of Myself." *Leaves of Grass.*

[139] Kramer, Gregory, ed. 1994. "Auditory Display: Sonification, Audification, and Auditory Interfaces. Santa Fe Institute Studies in the Sciences of Complexity. Proceedings Volume XVIII. Reading, MA: Addison-Wesley. Accessed: November 12, 2019. https://archive.org/details/auditorydisplays00greg/mode/2up?q=Kramer

underwater earthquake and the birth of the tsunami were picked up by the hydrophones of the National Oceanic Atmospheric Administration's VENTS Program**.** The Tohoku earthquake was the largest sound they had ever picked up, though the hydrophone was located 1,448 kilometers away.[140]

Using the seismic data from this same quake, audio programmer and artist Micah Frank used his creation "Tectonic", (2016) a real-time seismic analysis and sound synthesis system based on parsed data collected from the United States Geological Survey (USGS) XML feed, mapped with Google Earth, and processed with Max/MSP, a visual programming language for multimedia, including sound, and Symbolic Sound's sound design environment, Kyma, to sonify the sounds of the earth shifting and opening that fateful day. With "Tectonic", sound is created in real-time by seismic activities as they occur across the globe. Using magnitude, elevation, time of day, and geographical coordinates, the data is mapped to synthetic spectrums and processed by granular, aggregate and subtractive synthesis. The result is: beautiful. The affect separate from its context is relaxing, pleasing, gentle sounding, quite pretty, until the jarring moment of what I can only image (as other information here is not provided) is the tremor itself, which sounds like a building alarm.[141] So is this more artistic and emotive approach effective in conveying the disaster, if that is even the point? Most comments on his publicly posted sound file range from "cool sounds" to "I'll send you the remix when it's done." When compared to the hydrophonic recordings from the VENTS program, perhaps the use of data to sonify is too abstracted from the event itself. Or perhaps, like anything, it depends on the many elements that go into a work, such as the artist themselves, what they are capable of, mindful of, and paying attention to.

Digital media artist Andrea Polli takes a different approach to sonification. During the 2007/2008 season Polli was on site in Antarctica conducting work through the National Science Foundation residency, working with scientists gathering weather and climate data. Here she created the project *90 Degrees South,* (2007-2008) which

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[140] NOAA has posted a video of the recording sped up 16x for human perception on their YouTube channel, here: https://www.youtube.com/watch?v=4rWDrZIucAQ&feature=plcp&context=C4c76cbcVDvjVQa1PpcFMIdkGAZy08KSnJR0QSvkCc74iRDe7AGfQ%3D

[141] While this work is no longer on his website or Vimeo page, you can listen to the audio on Frank's Soundcloud, here: https://soundcloud.com/micahfrank/earthquakes-off-the-east-coast

"aims to communicate both the aesthetic beauty and the scientific importance of Antarctica to global climate."[142] (Polli, 2007) This project gave birth to the audio album, "Sonic Antarctica", (2009) which uses field recordings, sonifications, and audifications (a technique involving direct translation of a data to an audio waveform) of the collected data.[143] I asked Andrea Polli in my chapter article, "The Sound of Disaster, Our Relationship to Sound in Danger": (Colbert, 2014b) "How can sonification help us understand climate change?"[144]

> One thing that comes to mind is that sound and music can provoke an emotional (or at least affective) response that is not always possible through graphs and images. For example, I have used low, almost sub-aural sounds in data sonifications to promote a visceral response in the listener to various atmospheric events. . .
>
> I have worked with weather and air quality data in real time, both using on-site data or remote data. To become attuned to the remote data takes some time and quiet listening, to me it is like being in two places at once, for example in a gallery or on-line and at a remote site near the North Pole. (Polli, as cited in Colbert, 2014b)

Recording on-site and working with the recordings of sites, UK artist Peter Cusack's *Sounds from Dangerous Places* (2012) sought recordings from disaster hit areas like the Chernobyl exclusion zone in the Ukraine, the Caspian oil fields in Azerbaijan, the Chernobyl-fallout affected farmlands of Northern Wales, and the rivers of Eastern Turkey with their extensive, local climate altering dams. What is surprising and moving about these works is the strong human element, especially the lack of human presence and the evolving relationship of humans to these post-disaster soundscapes.

Listening to some of Cusack's recordings from Chernobyl, one might feel surprised to hear that iconic name attached to such rich and pastoral soundscapes. When we consider the massive industrial accident that killed thousands

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[142] Documentation of the Project and outcomes can be found on Anrea Polli's *90 Degrees South* (2007-2008) project site here: http://www.90degreessouth.org/

[143] Polli, Andrea. 2009. *Sonic Antarctica*. Germany: Gruenrekorder. https://www.gruenrekorder.de/?page_id=342

and created an exclusion zone of 30 kilometers (19 miles), some of us are compelled to imagine a wasteland with not a living creature in sight. But those like Cusack who have visited the area are met with quite a different experience, one we can share when listening to the recordings. Cusack says Chernobyl held the richest dawn bird choruses he has ever recorded, haunting full choruses of frogs and nightingales sound throughout the night. And again, we hear that iconic sound of the Geiger counter increasing its metallic chirp as Cusack walks toward an infamous radioactive hotspot, at one point it makes an eerie duet with a calling cuckoo.

I asked Peter Cusack: "How has the sound of dangerous places surprised you?" (Colbert, 2014b)

> Dangerous places can be both sonically and visually compelling, even beautiful and atmospheric. There is, often, an extreme dichotomy between an aesthetic response and knowledge of the 'danger,' whether it is pollution, social injustice, military or geopolitical. (…)
>
> Many aspects of dangerous places are a surprise, mostly because one's expectations are often wide of the mark, especially in the smaller details. However different places surprise one very differently. For example, the name 'Chernobyl exclusion zone' implies no one is there. Not so. Thousands still work at the site, some live there and some commute in every day (by rail, so trains are part of the soundscape). That many people also require restaurants, bars, administration and all the infrastructure of a small town. So, people and work sounds of all kinds are still to be heard around Chernobyl town and the nuclear sites. Some of the villagers, originally evacuated out, have returned bringing their sounds too – horses, chickens, carts, hand farming, traditional songs, modern day TV. The zone is also now a wildlife haven, and the sounds of the dawn and evening chorus of spring are intense. The vibrant recordings of wildlife show that many species, at least, are doing fine in the exclusion zone.
>
> (Cusack, as sited in Colbert, 2014b)

The contrast of a pleasingly full biophony to a location associated with danger can be a powerful contrast. In Gus Van Sant's "Death" trilogy, with the films *Gerry* (2002), *Elephant,* (2003) and *Last Days* (2005), Van Sant and sound designer Leslie Shatz used the reverse of what we have come to expect from cinema sound to prepare us for disaster, de-familiarizing the world they create on screen. Van Sant utilizes recordings of soundscapes from Hildegard Westerkamp, whose work and research was written about in Chapter 1, in unexpected ways, playing with our anticipation. Again, taking in sound cues as information, we may classically expect ascending violins or a low building rumble to prepare us for the unfolding of something dangerous in cinema. A study even linked the most common types of "nonlinear vocalizations," or sudden acoustic complexities and changes, used in horror movies soundtracks to aping the cries that many species use at times of distress.[145]

Van Sant and Shatz decided in *Elephant* to use excerpts from Westerkamp's stunning composition, "Beneath the Forest Floor". (1992) As we follow a character down a school hallway in the aftermath of the initial shooting, our ears describe to us a place in a strange harmony, one out of context and in contrast with the world our eyes tell us we are experiencing. Westerkamp created the composition from her recordings of the British Columbian rain forests, old-growth forests with trees over a thousand years old, threatened by ever creeping clear cutting. The sounds from such growth seem to carry their time, which can feel so still compared to our quick life spans. In the film scene, the out of context and the confusion that plays on our perception, heightened with all sounds seemingly the same size and distance from us, give us a sense of the aural uncanny, and we feel prepared for something off, no matter how peaceful the sounds sound themselves.[146] This echoes the feeling of displacement and detachment of the characters from the world they embody.

When a character on a screen isn't speaking, they are listening, and so our perception is through their ears to what they are listening to; and if done well, we believe their world, even at its most otherworldly moments. This association is

[145] Blumstein, D. T., Davitian, R., & Kaye, P. D. (2010). Do film soundtracks contain nonlinear analogues to influence emotion?. *Biology letters*, *6*(6), 751–754. https://doi.org/10.1098/rsbl.2010.0333

[146] Ex. from 3:33 http://www.youtube.com/watch?v=AIyrd6G2790&feature=related

illustrated very well in *Last Days* (2005) towards the end when while following the character, Blake, and listening to the contrasting sounds from Westerkamp's "Türen der Wahrnehmung (Doors of Perception)", (1989) the character suddenly turns and seems to react to the sound. With this sudden shift and focus of his seeming perception to what we perceive, our emotions shift and focus as well into a strange and strong climactic point.[147]

In both examples, Van Sant uses Westerkamp's compositions as acousmatic and asynchronous elements to the soundscape to heighten the disorienting affect and translate an asynchromatic psychology of the characters to the audience that speaks to that moment being experienced by both. Our relationship to the sound of our environments is an interesting one. We rely so much on this function for a constant and usually unconscious processing and filtering of the world around us, even while we sleep, searching for signs of time and geography, for signal and company, for danger and warning. Our perception changes depending on the information we already have utilizing our other senses. Why is the forest silent? What was that crash, is it close? Did something large make that twig snap? Is this the quiet before the storm? We listen for a divination, to tell us what's coming.

Krause's work on detecting subtleties in change has become, in the relatively short amount of time I've been writing this, almost obsolete towards attempts to highlight impacts of Climate Crisis. Not obsolete in the sense of the important study of changes in soundscapes it allows access to. But in that now so many of Climate Crisis's effects are obvious and deafening (and fall on ears choosing to be deaf to the sound, or ears cultured to expect it). Fires roar, waters gush, and in this great extinction event, some animals and habitat may now go out not with a whisper, but their whisper overpowered by a deafening bang. If there is emotion to this writing, if there is a sense of urgency, I appeal that it is appropriate.

What has been written about the *Wayback Sound Machine* thus far has been about perception, collections, and detection, listening to aural warnings from the past in our present, creating work with this information towards our future. Sonification

[147] Ex. from 7:22: http://www.youtube.com/watch?v=uTFklQ-oiXM&feature=relmfu

can be a technique used to make visual data felt, but on-site recordings and phonography of soundscapes, with their complexity of aural information, and our background and listening relationships, may be more affective, with more information and IBEs translating and extending. Chapter 2 explored listening and the Wayback Sound Machine, beginning with the concept of the wombscape, we would "eavesdrop into the darkness," our first complex soundscape and our earliest learning. (Toop, 2010. IX) I explored with artistic practice forms of recreating and recollecting this wombscape, such as sound design and soundwalks, and with other researchers, such as Jennifer Heuson, explored and developed other applications of the concept. The Wayback Sound Machine worked with soundwalks as a way to connect and investigate listening, memory, and movement together, and activate "pure memory" through listening. (Bergson, chap. 2)

I related the first Wayback Sound Machine, a sonic hauntology as acousmatic as the wombscape, a soundscape of sounds mixing time and place, exact source and emission unknown, and how this inspired the concept of sound back in time and sounding back time, leading to exploring research and methods of collecting and gathering, of composing and compiling sound, of archive forming and archive using, towards creative sound design. I curated a series inviting other artists and researchers to explore their thoughts and theories related to the Wayback Sound Machine and considered the concepts and methodologies of it towards media archives, and cinematic sound design as affective sonic ecologies (Lacey, 2016, p. 33) and acts of counter-aurality, which I will explore further in the next chapter.

Chapter 3: Soundscape →listening → composing and compiling → sound design

> I would rather people feel a film before understanding it. I'd rather feelings arise before intellect.[148] (Bresson, 1960)

Henri Bergson's work and thought on the sense of duration became an important part of considering the experience of cinema. He considered durational time as a subjective state. (Bergson, 1962, p. 139) What is especially appreciated about his work in this realm, as well as future work it inspired, for example, Giles Deleuze and Maurice Merleau-Ponty as discussed in this thesis, is the contribution and extension of audience sense beyond the screen, allowing cinema to be not just about vision, but also its relationship with audition in that duration. Deleuze, for example, reads Bergson's subjectivity itself as composed of time, like a material. He writes about this time material throughout Cinema 2, and the relationship of that to how cinema alters our experience of time. (Deleuze, 1989, p. 82) Durations are fluid things, and multiple durations can co-exist and even, as Bergson felt, be in communication together, multitudes; we can imagine this when picturing that starry night sky from the beginning of Chapter 1, the time of the star we see with the time we see it. As written about earlier, this can be extended to sound as material, as object, and the characteristic of time in that as well. Cinema has long held a special relationship with time, since the inception of the medium. Time in the time-based, the relationship of that to sight and sound, has been theorized and argued over, always considered one of the medium's principal mechanisms. (Youngblood, 1970, p. 41)

[148] Interview with Robert Bresson. 1960. *Cinépanorama*. [Television series episode]. France

As stated before, this thesis is interdisciplinary, to its foundation. If it were to be broken down to its conception, we go back in time to the point where I'm walking on that path in Cornwall, experiencing the sonic fragments of time in an imagined future artwork, that is itself interdisciplinary. The first works that come from this first idea have homes in audio-visual artwork, as well as art studies and soundscape ecology, expanded cinema and soundwalks back through time. Artistic methods that complicate time, or rather highlight the subjectivity and complication of time through sound and image. In *Cinema 2: The Time-Image*, (1989) Deleuze's cinema shifts from movement to time. Cinema as a thing, "pure optical and sound", an emancipation that gives it a "direct relation with time and thought". (Deleuze, 1989, p. 17) Following Bergson on memory, he shifts from the movement-image (matter) to the time-image (memory), to the crystal-image: a merging of the actual and virtual, the virtual being recollected from the past, the subjective, existing always somewhere in the temporal past, ready to be recalled by the actual image, more objective and perceived in the present. It fluctuates between that actual and virtual, records memory, confuses mental and physical time, and is sometimes marked by incommensurable spatial and temporal links. There is a split in time, two streams, one propelling the present on forward, the other preserving the past. (Rodowick, 1997, pp. 79-85) Deleuze's' crystal-image is the "present/pastness" of cinema; the past is central to the concept. (Deleuze, 1989, p. 81) The crystal image gives the sensed cinematic moment the complication of sensing an always present always passing in a past that is preserved. "What we see in the crystal is no longer the empirical progression of time as succession of presents, nor its indirect representation as interval or as whole; it is its direct presentation, its constitutive dividing in into a present which is passing and a past which is preserved, the strict contemporaneity of the present with the past that it will be, of the past with the present that has been." (Deleuze, 2013b, p. 281) The time machine of cinema, a bit like Walter Benjamin's Angel of History, always situated in the present, always looking behind. The powerful and haunted time machine of cinema, and its cinematic sound.

III. 1. A case for case studies: An introduction to artistic works with the Wayback Sound Machine

The Wayback Sound Machine is a conceptual tool for examining, and case study projects allowed this research to examine the questions, themes, concepts, and methods this thesis proposes in real-life context of artwork creating and critiquing at all stages of production. Examining the primary project question on *sounding the past*, a preliminary question can be addressed; why am I working to express a concept in text (i.e., this thesis), what is already being functionally expressed and explored through the art works within this project? Art is a source of empirical knowledge, and the experience of creating a work–as well as experiencing a work–carries over complex sensory information, often written off for being subjective, messy, and poorly understood. Similar to time, once could say. Or sound. I am writing to communicate this sensory knowledge, to translate to language the power of audio and audition to express through time and time-based media. I am considering what can be gained from sonic expression that is different from other mediums–or different in conjunction with other mediums, especially time-based image–and what knowledge and action might expression through that work provoke.

How to write about sensation? A drop of water falls into a puddle and creates a wave. A wave is a disturbance that travels through time and space. It affects everything it touches, it creates other waves, continues colliding and transferring energy to molecules that do the same in turn to other molecules. It can be water, it can be light, it can be sound. It can be many things that collide into our bodily molecules, and our system translates. The water could be cold, the light could be bright, the sound could be loud. This is often passive information. But should we actively feel how cooling the water is on a very hot day, should we actively consider how strong that sun is, and should we actively enjoy how the crash of an ocean wave makes our heart race, our world becomes richer and more complex. We need to sense the world. Remembering that we aren't limited to just knowing our place in it–but can feel our place in it–allows for a transference and embodiment of information that goes further, goes deeper, creates extension of thought beyond our perception of present. Creates empathy, expands, and vibrates the interior and exterior *milieu* as described by Deleuze and Guattari–middles in motion, (1987, p. 21) the description applicable to even the physics of a sound wave–something relational, not merely a thing in itself.

Practically technical, and combining "surrounding", "medium", and "middle". A vibration that effects, and a vibration that joins. (1987, pp. 313-314)

Sound design allows us to enter deeper and go outside borders and frames in visual works, playing a crucial role in transmitting an experience from most time-based media. This thesis is supported by an analysis that includes both theory as well as empirical qualitative research based on observation and information from both case study art works towards a practice-based research, interviews related to the theory and case-study application, as well as other work and research that contribute towards the argument. While most of these case studies will illustrate methods used toward a further discussion, the theory of the application of a critical aurality can be observed within a microcosm model, *Come Kingdom Come*, (2012-2017)[149] a project in which the concept was applied towards the sound design of the intermedia performance. To deepen and focus the listening practice and spectators' aural attention, I removed my own vision while performing. Within the case study projects, this work holds the application of the concept more theoretical over methodical, and qualitative in its information. I will go into extensive detail on this project initially, as it raises questions and issues, as well as comparisons, of visuality and aurality.

What is the archive's role in sounding the past, and whom does this give voice to? The present isn't merely a transition between the past and future, between moments. The experience of the present is a standstill of time, and an acknowledgment of the experience of time, simultaneously. The past is not just a line from the present reaching eternally behind us, and the perspective of the past viewed like that isn't what is most needed. Humans need the experience of moments that rupture that line. A temporal experience that is expressive, and a consideration to its subjectivity. Artistic approaches towards the archive can weave moments from the past together into the present, folding time, constructively rupturing the historic timeline with that expression. Of course, there is a responsibility to that that should be considered.

III.1.a. Blinding the performer, tuning the audience:

< Figure 10 >

[149] http://www.mailecolbert.com/proj-kingdomcome.html

The audience reported a feeling and consideration towards the heard and unheard. The affect was Big: earthquake, known sounds, sonified sounds, and Small: bird extinction, hidden sounds, amplified "silence". At points the amplified silence in contrast, or after a sonified event, became Big. Expressions of a Future, biblical apocalypse and ecological apocalypse, fluctuated between each other and the Big and Small sonic affect. The performative experience shifted from the moment of putting the blindfold on, not only for myself as performer, but also for the audience watching. It is appropriate here to utilize an auto-ethnographical descriptive structure: my experience in this was less of a sensory erasure than a sharpening of other senses, and how this affected my relationship with the audience, as well as my relationship with the space on stage, with a shift of focus and a tuning between my sense of hearing and touch, and the perception of the space around me through them. Performance is primarily perceived as a visual act. Even when what is being performed is sonic, the key to what the audience is considering is what is in the space we call stage, the sound almost secondary in the sense of being attached to what is seen. What cinematic sound designers often work with to transfer meaning and emotion, and to extend past the screen–the acousmatic sound–*Come Kingdom Come* works with, in tandem with audience expectation in relationship to information given by sound in multiple ways. During the event I am describing, the blindfold became the wire connecting every circuit into a shared phenomenological circular flow.

Come Kingdom Come (2012-2017) is an experimental opera concerning millennialism and apocalyptic thought and theory, beginning with an attempt at an exploratory comparison of this past turn of the millennium to its prior. What became more of an interest in the following years of performing it was its geography in time and space sonically formed and placed using various archival recordings of the before, during, and after-math of natural disasters and other catastrophic phenomena; the seismic activity of an earthquake, thunderous tsunami, VLF of a sun storm, the quiet of Chernobyl exclusion area decades after its disaster, endangered species of bird calling in the desert. The audio-visual performance begins in darkness with VLF (very low frequency) recordings of our magnetosphere surrounding the seated audience.[150] Images on the triptych of screens emerge one by one in a slow reveal of a

[150] Examples from NASA can be accessed and listened to on their VLF project INSPIRE site here: http://www.spaceweather.com/glossary/inspire.html

technique of exposing the development process without a direct subject, developing but never fully arriving, seen but unseen. The sweeping sonic information usually outside of our hearing range made audible, from above our earthly air, surrounding and weaving with records of a time stamped and gone, and a place that became Event. The performance bookends with the bringing in of a live-feed of the electromagnetic current of the space, mixing in duet with the recorded VLF from the beginning, weaving past into present, and bringing us to a full but changed circle, that if mapped might resemble an Ouroboros.

And so, this time it was performed blindfolded. In the beginning I stand, and I walk to the audience. With the blindfold, I had to walk slowly, stiffly. My audience told me the experience of this was unnerving for them on different levels. They could visually see my sight was not in use, and so they worried about my safety. I was carrying my VLF receiver, which is not immediately identifiable to most people, and since I built my own, it looks like a metal box with a few knobs, switches, and wires, with a very long whip antennae coming off one end. I would lightly run the antennae over them, at which point the sound would change to unearthly crackles and moans over the speaker system. Visually, a generic box such as this, in our times, is itself a frightening thing, I am always stopped at airport security to explain it. When in action a ghostly sound bearing no resemblance to the expected happens, and there is a complicated physiological and physiological affect with that asynchronicity. (Heuson & Allen, 2014, pp. 113-120) I felt, and could hear through intake of breath, shifting in seats, nervous muffled laughs-my audience. In turn, that had an effect on my movements, and therefore my performance. A dynamic environment of connection is formed, the artist as ecologist. (Youngblood, 1970, pp. 346-351) My audience and I, and between us a charged and changing ‘affective sonic ecology’, (Lacey, 2016, p. 33) each entity with unique emotive responses, in a shared field, affecting that field collectively, creating what Voegelin might call a ‘sonic life-world.’ (Voegelin, 2010, p. 12)

< Figure 11 >

What changed when blinded in consideration to the whole? Why did that small visual change create a large affect on the audience? What elements of this can be considered and used in future projects? This experience had me considering in-depth the relationship between aural and visual, sound studies and visual studies,

visuality and aurality, in reference to the arts and artists. Visual culture can apply as an alternative and critique to European-biased practices in art history (Mirzoeff, 1998, p. XXX), and this thesis is working towards a consideration of both art and history, in relationship to a counter-aurality.

> "And this redistribution itself presupposes a cutting up of what is visible and what is not, of what can be heard and what cannot, of what is noise and what is speech." (Rancière, 2004, p. 225)

III.1.b. Nostalgia and place: (*Passageira em Casa and Passageira australis*)

Returning to the Acoustic Niche Hypothesis and IBEs, we can take the theorized origins of a sense of composition and that relationship to sensible signals in our soundscapes, and apply this towards sound design, revealing information about listening, how we listen, what we listen for, and consider how that can be designed towards and used creatively. Within the practice-based research component to this work, aside from the previously mentioned performance, I have been working with three main case-study projects: *Passageira em Casa* (Colbert, 2012-2016) and *Passageira australis* (Colbert, 2013),[151] and *Radio Terramoto*, (Colbert & Costa, 2013-2015) which was written about previously.[152] In the same old work notebook where I found the note about sounding the past with *Radio Terramoto*, a few pages latter I read: "Passageira em Casa: Three Chapters. 1) Memória/Memory: Portugal 2) Tocar/Touch: Australia 3) Voltar/Return: New York". The New York version is now set to be a living archive online, allowing return to anywhere and nowhere, living in a space that by its design defies and disrupts time and chronology. Remember that the Internet is also a Wayback Machine.

What can we gather from sounding the past, and within that, what is the relationship between soundscape and sound design? *Passageira em Casa (The Traveler at Home)* begins to explore the notion of the Wayback Sound Machine with a sonic geography, similar in its use to *Come Kingdom Come*. *Passageira em Casa* is an intermedia and interdisciplinary performance inspired by the journey to define the concept of home. The narrative is a partially fictionalized and partially personalized

[151] http://www.mailecolbert.com/proj-passageira.html

[152] http://www.mailecolbert.com/proj-wayback.html

account of a maritime history of Portugal, enacted by a dancer, vocal performer, live video, and live sound composition using field recordings and geo-specific sonic archival material that creates, extends, and weaves a geography through the narrative and space of the project. From a bird song dawn chorus in Lisbon to underwater seismic activity in the oceans to an orchestra of insect activity in the Pacific Islands, recordings along a maritime navigation route flow throughout the performance, giving a soundscape and sound-line to the narrative's location, one that the dancer and audience follow together. With the theory in mind that soundscapes carry information–signal and symbol, materiality and metaphor–the theory follows that recordings will carry at least in part that information as well and following that those recordings could be used in sound design for transferring information and provoking affect in the experiences that would have a tie to the original scape and context of that sound. Affect theory, basically defined as the study of the biological portion and patterns of emotion, has been useful in studying and organizing this,[153] and led to working out a way to consider further dimension within the design. If we consider, as we did with *Come Kingdom Come*, the flow–from the production to the performer to the audience…from the audience to the performer, and here we designed the project to have that flow return to the production. Within this were smaller loops of affect between the performer and audience, which is to be expected in performance, but also between the dancer and the production.

< Figure 12 >

There are key moments in the project performance that also correspond to key locations on the stage, which the audience is designed to sit around rather than in front of. These locations on the stage are also geographic locations in the narrative, to be explored at specific times. Sound provides the primary affective loops I'm writing of here, but remember sound also provides the time and geography in the narrative. Specific sound recordings from geographic locations on the narrative's timeline guide the dancer to where they need to be, like following constellations at sea, but with sound being a time medium, the designed soundscape also provides the time. Time felt is subjective, fluid and changeable, personal in that way–like sound perceived. I wanted to find a way to give the dancer a way to express their felt time and perceived sound, to give them a way to directly affect the elements of the work, based on the

[153] Tomkins, S. (1962) *Affect Imagery Consciousness.* New York, NY: Springer. (chap. 1)

effect of what they perceived while performing. I also wanted to have a way to highlight how history is created, made story by those who have heard voices, who have power.

I researched, designed, and spent many studio hours testing with the sound engineer and dancer a system, a kind of ecology, for *Passageira em Casa*'s premiere performance. Using a Kinect motion sensor, the dancer could trigger specific sounds and soundscapes using choreographed pose and gesture. From a known database of these sounds, it was her choice with movement what to play and when. These sections were accessed during the initial "voyage", when her costume turns into a ship, which is also a screen on which navigation maps are projected. They were accessed again to her discretion later in the performance, when she felt "lost". And again, to return "home". The audience could see, hear, and feel her connection with the mediums, from her hitting the floor, to her commanding the soundscape. Their proximity and surrounding allowed her to always sense them in return and consider how to affect them further.

What is the artist's role in the archive and with sounding the past, and how can that strengthen a critical practice? How can these questions lead to a critical aurality, and a critical sound design? When I write that in *Passageira em Casa,* the designed soundscape "provides the time", in the next variation this holds a double meaning of both time during the performance in the present, and as well the time corresponding to the narrative of the past. The more recent Australian version, *Passageira australis* explores sound in time, in relationship to space and place, towards a counter-aurality.

< Figure 13 & 14 >

Developed at the iAir residency at RMIT, *Passageira australis* holds a focus on the debate behind whether the Portuguese were the first Europeans to arrive in Australia, based on the 16th century *Dieppe* maps of *Jave la Grande* and the myth/history of the Mahogany Ship, the possible Portuguese caravel wreck that hasn't yet been discovered, its story based on eyewitness accounts from the 19th century and

a missing ship from a Portuguese voyage from 1522.[154] The soundtrack reveals two sound-lines based on the impact on flora, fauna, and overall soundscape of both continents. The project's soundscape functions as a Wayback Sound Machine exploring sonically these two timelines, and how they affect each through different points in time. A two-channel composition, different than stereo, one speaker represents Europe, the other Australia. As the dancer, our sailor, moves from one end of the space to the other, the sound in each channel is changed based on their approximate location to each continent. With this experience, my hope is the audience comes away thinking about the interconnectivity of the world, and how we impact the places we touch.

III.2 Revival and re-enactment, another sonic hauntology and the aural uncanny:

The aural uncanny valley: an excellent and descriptive example of this can be found in Andrei Tarkovsky's *Stalker*, (1979) where the sound design is the main element in transmitting an immersive science fiction narrative to its audience. We find ourselves towards the middle of the film within a tunnel in the Zone. The characters must go through, and while there is no visible threat, when a rock is thrown to test the environmental what returns to them is a soundscape active with various geographic information–the rock hits and emits a sound wet with reverb, the next bounce and hit is flat and close, the following sound appropriate to the scene, and yet following that is loud and fake. The same mix of aural cues is laid upon the characters voices and footsteps as well. Mostly we don't notice, but we sense the place is off, there is something unpredictable, impossible to know about that tunnel, and this effect enhances our characters' narrative and makes the science fiction of the place believable. We can step into this tunnel with them. We can still experience a sound environment that is "wrong" with the aural information telling us that it is "wrong", but we can experience that as an aesthetic affect, as cinema culture and history with sound design as something hidden. The sound designer plays with the expectation and

[154] Trickett, P. 2007. *Beyond Capricorn, How Portuguese adventurers discovered and mapped Australia and New Zealand 250 years before Captain Cook.* Adelaide: East St. Publications. p.195. ISBN 978-0-9751145-9-9

prediction of expected sound and sound quality in relationship to what we see, another form of sonic hauntology.

Akritchalerm plays with this phenomenon. Returning to Apichatpong and the second half of *Syndrome and a Century*, (2006) we are forty years later and in an urban setting. We can sense we are in a bigger building–the windows are closed, and the hum of fluorescent lights and machinery mark a more sterile time and place, but the dialog and aural vs. visual POV is the same. Enough time has passed since the beginning of the first half for the audience, at least in the first viewing, to have an uncanny sense of almost-*déjà vu*. Eventually this sense is broken by the memory re-organizing itself, but that moment is enough to put us subconsciously on guard, with an expectation for the unexpected, a gentle and affective suspension. This allows an affective climactic point, uncanny working for the magical realism, when around one hour in we enter the basement of the hospital and encounter a basement soundscape whose sounds slowly seem "off". We then cut to a scene of a triplegic person moving away from us down a hallway, each time he makes contact with the floor the sound of (what we will later learn to be) a tennis ball being hit against a wall–the sound of the scene drenched in irony, and an aural uncanny valley of timing, as if something went wrong on the Foley stage. The effect is fantastic and strange, playing with the audiences' sonic expectation, mixing sonic information of space to create a new place and affect.

In Alain Resnais' *Last Year at Marienbad*, (1961) space and time shift fluidly to create an uncanny and haunted Place, in part constructed actively by the audience, who are asked to piece together the non-linear narrative, as they wish. What the characters are perceiving in their Now, what they are remembering, or perhaps even imagining, weaves much like perception and memory itself. Or perhaps it is the haunting of the place itself: echoes of figures, time, and sound, at times repeating, as if stuck on a loop, at times even hinting at events of a future, past. Resnais said about *Marienbad*, "For me this film is an attempt, still very crude and very primitive, to approach the complexity of thought, of its processes."[155]

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[155] Benayoun, Robert. 2008. "Alain Resnais: arpenteur de l'imaginaire," interview in *Cahiers du Cinéma*. Paris: Ramsay. pp. 105–106

When the film was prepared for a DVD release, Resnais chose an un-restored film soundtrack as an option to the restored version. He stated that choices were made with the sound based on the tools of the time, and acknowledged these carry their own sound of the time, that something gets lost when changed for the tools of the present. You lose the filmmaker's voice, performance is deprived. For him even the music track should not be corrected. If a spot gets distorted by the materials of then, he felt correcting (erasing) these renders the music sounding dead. In the case of the haunting organ track for this film, that feels especially apparent. Interestingly, he is supportive of careful visual restoration, but feels at least the option for the original soundtrack should always be present. "It is better to respect the sound characteristics of the time."[156]

> Empty salons. Corridors. Salons. Doors. Doors. Salons. Empty chairs, deep armchairs, thick carpets. Heavy hangings. Stairs, steps. Steps, one after the other. Glass objects, objects still intact, empty glasses. A glass that falls, three, two, one…[157]

When moments or statements are repeated, when a loop is perceived, the uncanny is triggered, a haunting unfolds. We question the voiceover: is he witnessing, or recalling, calling up and calling forth as he remembers, or is he himself stuck on a loop. The internal turmoil is sounded for us, like a secret between the soundtrack and the audience, which the picture is left in the dark about. "…sound once heard repeats forever in that which one dares not call memory." (Chion, 2016, p. 29)

Loops and repetition revealing inner workings are throughout the work of experimental filmmaker and animator Kelly Sears. Sears' technique of animating selected parts of often still photos from the past creates a visual uncanny that her haunting soundtracks prepare then amplify, using learned aural film culture tropes in genres such as horror and science fiction to transform and translate the images. The slight movements play with our expectation of movement, and our perception struggles to categorize the characteristics and qualities–moving, or still, funny, or threatening. Sears works with newsreels, high school yearbooks, past beauty pageant

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[156] From the companion booklet with The Criterion Collection DVD release.

[157] Resnais, Alain. *Last Year at Marienbad*. France, 1961. This film and quoted voiceover, in conjunction with this thesis research, inspired a project and writing for The Leonardo Music Journal, which I will include in the Annex, pp. xiv-xv, exploring through science fiction, sound, time, and archives.

footage, first-aid handbooks, survival guides, yoga instruction manuals, and other archival sources claiming an authority to inform and guide. She reworks and restructures to collage a disorienting and unsteady sense of history, shifting the stories between the official and uncanny, the official and the occult. In Sears' own words, these films recast "American archetypes and institutions to reimagine our own social and political legacies." [158] *The Drift* (2007) opens with a vaguely oscillating tone, guiding us with intrigue but warning into a starry sky. Audible underneath, a room-tone locates us not drifting bodily in space, but inside something–we are in something with an engine, moving. The voice over begins, an urgent, gravely male voice reminiscent of a television detective film or a captain's log, informing us, "It was space fever", over archive images marketing a past lifestyle ideal, peppered with found family photos, the sound giving a darkness to the smiling faces. The voice over informs us in past tense the focus and desires of the people had shifted from things of the earth towards space.[159]

An appropriately and affectively canned-sounding control room is shown, static with only its figures drifting in and out of locations in its space, on a loop. The added room ambience lends an eerie air and dimension. With the relatively minimal movement techniques Sears uses with primarily still images, the audio is a vital extension and expansion, and often as well translation, of the undercurrents of social, political, and psychological aspects to the use of these images. There is also translation of place, the images in space are grounded and tied to a soundtrack that without the visuals could be electronica, instead they act simultaneously as soundtrack and soundscape of the ship itself, the images of the spaceship from an era also obsessed with analog synthesizers creating other-worldly and futuristic atmospheres, so much of the audience is audio-visually, culturally prepared. *The Drift* is a mysterious draw, a beckoning from space. The engine sound becomes its siren song, when broadcasted (a theme throughout much of Sears' work–the outwards of broadcast, and inwards of reception), it infects those who hear it, and give in to its call.

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[158] From Kelly Sears official website: http://www.kellysears.com

[159] Quote from the voice over on *The Drift* (Sears, 2007). This film and others of Sears can be found generously on her Vimeo page: https://vimeo.com/kellysears

The Body Besieged (2009) works with animated still images from yoga and workout instruction books to, "reveal bewitched and frenzied bodies (…) Women move through a possessed psychic space that distorts and mirrors some of our daily routines."[160] Animating still images gives an aural freedom to play with the uncanny valley, there is not the audience preconceived expectation of sound, so any sound close to sync is made strange, whether in clear mimicry of how the visually depicted environment might sound, or playing with the acousmatic and asynchronous. Sears uses all these techniques to reveal and transmit past possible stories, alternative histories that haunt and critic our now or warn into our future. The moving bodies in *The Body Besieged* are locked in loops, amplified by the rhythmic soundtrack, they seem phantoms of a past broadcast we locked into, the sound semi-mechanical and punctuating their futile movements, repeated poses like clockwork.

Sears cut figures out of archival films from the 1950's of telephone operators and people on phones, mixing histories with events of that time and bringing it into the present in *Voice on the Line* (2009) to reflect on issues of national security and civil liberties like privacy, reflecting on how "technology can be used to shape our fears, desires, and how we feel connected."[161] As the film opens up on a shot of a finger dialing a rotary phone, gently menacing radio-wave sound come to us, again with the haunting of a broadcast from the past, a transmission to us. This film uses moving images, but their backgrounds are replaced with looping wallpaper patterns reminiscent of avant-garde paint-on-film techniques, a section of these characters' world seems to be revealing its celluloid material, breaking through. The figures movements are slightly off, not quite matching each other in this shared world, as if a different set of physics applies to each of them, the things holding them together are those haunting radio-waves, asynchronistic and acousmatic, guiding the uncanny affect to menace. When an office scene comes up, with an almost-possible office ambience of murmurs and machines, or the sound of buttons pushed on another phone, the affect is of two dimensions overlapping. The phone operators possess an irresistible resonance to their voices, becoming a Cold War era spy technique used by the government, who then can't resist listening themselves, creating a beguiling feedback loop or transmission. "All of the conversations with operators were

[160] From Sears' description of her film on her Vimeo page: https://vimeo.com/kellysears

[161] Ibid.

thoroughly recorded, obsessively archived, and played in heavy rotation for the central agency." Within her own film rupturing and problematizing a history, she speaks of a problematic archive forming and use, a Mass Observation. The agents, addicted to the broadcasts, justify invasive listening as having to "investigate, to learn about the nation, to understand what we are made of, as they reached again for the rewind lever,"[162] as erotic images begin to emerge and reveal from the wallpaper background patterns.

Sound is a definite tool to achieving Sears affects, and the ghostly radio-waves return to us in *Once It Started It Could Not End Otherwise* (2011), described by Sears as, "Candid photos from 1970'a high school yearbooks resurface in a minimalist horror story."[163] The grainy sounds render the photos a haunting archive of mug shots, the particles of the ink collude with the texture of the sound; the title hinting with the sonic characteristics that things did not end well for them. Another theme that comes up in Sears work, which I often consider in collaboration with the broadcast and transmission themes, is contagion. The movement of strange light on the old still photos of a high school building hint towards this, the structures don't match their backgrounds and sky in movement, light, and time, the soundtrack plays with the aural essence of horror genre, all coming together to form a hauntology of authoritative administrative buildings of our past and in our present. The students begin to appear, mostly frozen from another time, or again perhaps an echo or projection, moving so slight you aren't at times sure if it was your imagination, the affect eerie, haunting, uncanny. The low frequency pulsation at this point seems to be the thing infecting, waves of sound and light, perceived and embodied. School spirit dissolves as the story reaches its climax, the inter-titles alert us that aside from the yearbook photos found, a film from the AV (audio visual) club was found as well. The sound becomes dense, surges, animated and obscure apocalyptic images flash on the screen with more movement than we now feel used to–it is overwhelming, and we have been prepared well to be scared. We return to the yearbook with this new unspoken sensual information, placing the next images in its context with the ever-building soundtrack…a wrestling match becomes a fight, a look of surprise becomes

[162] From the voice over in *Voice On the Line* (Sears, 2009).

[163] From Sears' description of *Once It Started It Could Not End Otherwise* (Sears, 2011), on her Vimeo page: https://vimeo.com/kellysears

terror, a playful scrabble becomes murder. Written messages become a code to a past horrific act. Everything begins to ooze and bleed animated fluid–buildings, eyes, noses–so over the top it's hilarious, except simultaneously the soundtrack has become a pulsation so gun-like we are also still caught in that terror built. The inter-titles inform us: "The events in this high school were not isolated. The students carried the trace of what happened to the outside world, where it quietly continued to spread."[164]

On haunting and hauntology, Sears describes two of her films as séances. *Tropical Depression* (2012) is "an animated séance that channels Galveston's haunted history."[165] *A Tone Halfway Between Lightness and Darkness* (2015) is "an animated séance conducted through discarded 35mm photography books."[166] A séance uses a medium to contact the dead, or the past–her the medium being audio-visual. The original French meaning refers to a session, and is often used when referring to a movie session, for example. *Tropical Depression* was created on a residency at the Texas Moving Image Archive, and weaves archival images of hurricane storm surges raging and Miss Universe 1931. I find this one of her most compelling soundtracks, treating the storm sound much like the radio waves of past projects, the layers of storm and acousmatic sounds weave like the images with its changing background. Image and sound reflect time and psychology, Miss Universe embodied as storms and the textures of material time wash over, take over, right to her bodily border. She seems a portal to time in flux, her inaugural entrance stepping out of the dust and cracks. She is caught in a smiling pose, the storm inside and the aural waves of rain wash and flood inside her, hinting at something else. The séance, the (re)vival, the (re)veal, *A Tone Halfway Between Lightness and Darkness* is loosely based on the spirit photography William Mumler, the first in the line to use double exposure to catch spirits in the medium in the 1860's. "The camera as the medium", she plays with the term, a tool or material for transmission, a system of communication, a mode of artistic expression, a go-between, a mediator between our world and the spirit world. The soundtrack again utilizes culturally learned tones and composition to prepare us for the ghost story, crackling with its static communication from another

[164] From the voice over in *Once It Started It Could Not End Otherwise* (Sears, 2011)

[165] From Sears' description of *Tropical Depression* (Sears, 2012), on her Vimeo page: https://vimeo.com/kellysears

[166] From Sears' description of *A Tone Halfway Between Lightness and Darkness* (2015), on her Vimeo page: https://vimeo.com/kellysears

world, reminiscent of EVP, electronic voice phenomenon, where sounds are caught and found and interpreted from recording mediums. Voices seem to emerge, but only slightly on the verge of our perception, keeping us in the space of questioning what we hear. “Light is an entity that travels in waves (…) the eye can detect only a portion of the spectrum.”[167] Like VLF, we desire perception outside our bodily ranges; we wonder what might be found there. There is something about time in this as well, capturing proof of something that has been with us all along.

These case studies serve as examples of the Wayback Sound Machine as an art practice concept and methodology, (III. 1; *Come Kingdom Come, Passagiera em Casa, and Passageira australis*) as well as a method towards analyzing film sound and film soundscapes that affectively complicate time and place, (III. 2; *Stalker, Syndrome and a Century, Last Year at Marienbad,* and the films of Kelly Sears). In the next chapter I will develop this and investigate sound from the past and sounding the past with film sound design and archives, exploring the question, *what is the archive’s role in sounding the past, and whom does this give voice to?*

[167] Ibid.

Chapter IV: Soundscape →listening → composing and compiling → sound design → past

What is the artist's role in the archive and with sounding the past, and how can that strengthen a critical practice? How can these questions lead to a critical aurality, and a critical sound design? Returning to information-bearing elements, or IBEs, most IBEs are generic acoustic patterns and sound elements, deceptively simple, and often shared across species–for example signaling danger, or even communicating with one's dog. Brains adapt and form to the IBEs in our shared soundscapes.[168] Sound, in all its complexity between emission, receipt, and auditory percept, can cross many borders. What might create an IBE could also be culturally learned, holding information about the time of that learning, creating auditory cinematic expectations that can be used in deepening the narrative immersive experience. We take this information in, quick and unnoticed, woven into the other cinematic information. Michel Chion speaks of sound in cinema as an added value:

> The expressive and/or informative value with which a sound enriches a given image, so as to create the definite impression (either immediate or remembered) that this meaning emanates "naturally" from the image itself. Added value is what gives the (eminently incorrect) impression that sound is unnecessary, that sound merely duplicates a meaning which in reality it brings about, either all on its own or by discrepancies between it and the image. (Chion, 1994, p. 5)

[168] Ehret, Günter and Singh Kanwal, Jagmeet. 2010. "Communication Sounds and their Cortical Representation." In *The Auditory Cortex*. ed. Winer, Jeffery A., Schreiner, Christoph E. New York City: Springer. pp. 343-367

Sound can extend, place can speak. Deleuze speaks of sound in cinema as a 'heautonomous sonorous image' that is on equal standing with the visual image. If the visual image is lacking in sound, sight and sound "become two autonomous components of one audio-visual or, still further, two heautonomous sonorous images". (Deleuze, 1989, p. 241) Experimental cinema forms play with this, for example the asynchronicity written about prior. Either perspective holds sound's importance and place in cinema, one part of a whole, even when fragmented.

> But in actual Archives, though the bundles may be mountainous, there isn't in fact, very much there. […] The Archive is made from selected and consciously chosen documentation from the past and also from the mad fragmentations that no one intended to preserve and just ended up there. (Steedman, 2001, p. 68)

These are the accidental and incidental collections of heritage, framed and given story, depending on who holds that power in that moment…the archivist, the artist, the teacher, the filmmaker. When we ask the archive about its time(s), we are asking for a divination, and one we can feel in the now. There is a responsibility to that that has been discussed and argued over, and these discourses are key to my own argument towards a critical aurality. The main question that continues to be raised is:

IV.1. What is the archive's role in sounding the past, and whom does this give voice to? How can sound talk about the past?

Why **past**? Past grows with our archives, or rather our archives grow with our past…or perhaps it was the first way around. Or more likely both. Our past grows, and our documentations of our past grow with our media acceleration. Within this, documents of endangered and extinct sounds grow as well, voices lost without a platform, without a context and meaning to embed. Context and meaning, art can give and transmit, carry to us that sensory information, have us care about that information. Perhaps care enough to take steps towards changes. "Why past?" is a question not asking about the past, but about our future.

> (…) the question of the archive is not, we repeat, a question of the past. This is not the question of a concept dealing with the past which might already be at our

> disposal or not at our disposal, *an archivable concept of the archive*. It is a question of the future, the question of the future itself, the question of a response, of a promise and of a responsibility for tomorrow. The archive: if we want to know what this will have meant, we will only know in the times to come. (Derrida, 1996, p. 27)

The archive is a question of the future itself, of a response and responsibility in the now towards that. Our archives that are forming now, we can't see; they are a hyperobject in many ways including that. We can try to visualize, and auralize, what they may be in our future, and what they might say about the now. This involves investigating the archive formed–how the past is narrated within them, and who is narrating and giving that voice. Using the archives can be a reclaiming of power. The artist in the archives disrupts the formed and forming narrative of those in power, disrupts the historic stories they form for their desires and desired outcomes, disrupts time, space, and place, to form the focus and thought, and missing voices. These artworks are documents that should be welcomed back into the archives from where they are from; this return and joining is a part of the Wayback Sound Machine, towards the living archive.

IV. 2. Silence and silent film, a voice from the past: *Moana* to *Moana with Sound* and *The Birdpeople*

A way to address the importance of sound in the archive is by initially speaking of silence. Our most famous "silence" in the art world could arguably be 4'33" (1947-48) by composer John Cage. 4 minutes and 33 seconds of a pianist at a piano: hands still, keys untouched, piano unsounded. The idea of still, of doing nothing, of an activated neutral state– "no neutral surface, no neutral discourse, no neutral theme, no neutral form. Something is neutral only with respect to something else. (Sontag, 1969, p. IV). Nothing is not what happens; the work is not about hearing silence, but about listening actively to your surroundings. Years later from conceiving this work the composer had had a chance to experience the closest earthly (and manmade) thing we have to real silence, in an anechoic chamber on the Harvard University campus in 1951. Cage later stressed, when asked about the experience, that

"there is no such thing as silence. Something is always happening that makes sound," (Cage, 1967, p. 117) and describes how in the chamber he heard both his blood circulating as well as his nervous system operating. The concept of silence implies its opposite, demanding its presence within what we perceive as absence. (Sontag, 1969, p. IV). Even our memories persist an implied soundtrack if we take that time and focus with them; a memory of a childhood forest though biologically silent has a very specific wind heard through its trees, through its soundtrack.

An attentive and critical ear can help us form a critical sound design when composing the past. In the Macaulay Library of the Cornell Lab of Ornithology, there is a recording of the endangered or likely extinct bird, the Ivory-billed Woodpecker, made by Doctor Author Allen in 1935.[169] There is a pause in the beginning of the track, a "silence" where we hear the sound of the recording medium itself, ghostly and crackling through time and wear, the medium for a moment speaks, an aural stamp of time. Through that trumpets the call of a bird gone, then its bill against a tree. More follow, it is not alone; at the time of the recording the bird was rare, but still not alone. In that time and technology, sound and image were still rarely married by medium, and there exists in archives bits and pieces of the history of this species-a photo here, an illustration there. I found a film that was shot the same year of this recording by Dr. Allen as well.[170] Submerged in a shroud of beautifully aged black and white grain, our ghost bird pecks at a tree silently. Separately. The library's mission statement reads:

> Our mission is to collect and preserve recordings of each species' behavior and natural history, to facilitate the ability of others to collect and preserve such recordings, and to actively promote the use of these recordings for diverse purposes spanning scientific research, education, conservation, and the arts.[171]

The arts, listed with the same import as scientific research, education, and conservation. Filmmaker Michael Gitlin, in the production of his film *The Birdpeople,*

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[169] The recording can be accessed and heard here online here: http://macaulaylibrary.org/audio/6784/campephilus-principalis-ivory-billed-woodpecker-united-states-louisiana-arthur-allen

[170] Also on the media library, accessed online here: https://macaulaylibrary.org/asset/487450

[171] The mission statement can be read on the about page: http://macaulaylibrary.org/about

(2005) knew an audio recording would transfer within its experience sensory information to help guide his audience to feel and care for this woodpecker of the past. The Macaulay Library archive not only gave him that recording, but encouraged its use and context, writing:

> This film looks at birds and birders as curiosities—interweaving artistically rendered footage, sounds, and narrative: live birds and the people watching them; live birds and the people engaged in the scientific ritual of capturing and banding them; stuffed birds and the people who glean new knowledge from specimens. The tale of the Ivory-billed Woodpecker surfaces throughout in book passages, voiceovers of modern-day scientists, offbeat third-person commentary, and a foray into the field with a team of top birders looking for ivory-bills in the Pearl River area of Louisiana in 2002.[172]

We watch Gitlin's closing scene, and regardless of any thought we had prior on collecting and collections, the Ivory-Billed Woodpecker comes to life for us as a voice of the past in contrast to the lifeless bodies also captured, once again, in front of us. The silent film speaks, blood and breath flow through that bird body. This is a voice from the past weaving through its many mausoleums, making a whole, a possible redemption, and a warning to the future. The Ivory-Billed Woodpecker, is for a moment given presence, giving weight to its silence, made more than a statistic. An archive can give a sound: a voice to the past, a call to the present, some advice for the future…the artist can help guide this.

< Figures 15 & 16 >

> Out of deep dreamless sleep I was woken, startled by a hollow resonance, a sudden impact of wood on wood. Was the sound an isolated auditory event within my consciousness — a moment of dream without narrative or duration — or was it a real sound from the physical world? The reverberation time was too long for the sound to have emanated from the bedroom. This would imply a sound coming from

[172] From the Cornell Lab of Ornithology website page on the film. Retrieved November 16, 2015: http://www.birds.cornell.edu/ivory/featurepage/IBWO_movies

> somewhere else in the house, an echoing space, mysterious and distant. If that was the case, then I could only assume the presence of an intruder, unlikely as a possibility. The sound came from nowhere, belonged nowhere, so had no place in the world except through my description. (Toop, 2010, p. VII)

Our experience of sound with moving image is both pre-reflective as well as an intentional reflective act towards meaning, utilizing imagination as well as perception. When sounding image from the past, our experience is also one of artistic inscriptions, and an author's sensory instruction.

< Figure 17 >

In 1923 filmmakers Robert and Frances Flaherty brought their children to an island called Savai'i in Samoa to live a year's time while they made their next feature film, after *Nanook of the North*, (1922) to be called *Moana* (1926). Like their film prior, and the film to come after, there are various staged and embellished elements to the film, leading it to be often called "docufiction", though at the time of its screening the word "documentary" was for the first time applied to cinema in a review. In 1975, Monica Flaherty, who was three at the time of the film's creation, returned to Savai'i with audio recording equipment and worked towards creating a soundtrack to her parents' film, including recording the soundscapes of the very village they lived and shot in, and dubbing in dialogue and singing in Samoan. With the consultation of many anthropologists, linguists, and other filmmakers, as well as her own childhood memories of the place, *Moana with Sound* was finished in 1980. Sadly, the original film's negative was gone, and her 16mm copy of a copy of the 35mm print was already degrading. (Close, 2016) It wasn't until the 2014 New York Film Festival that a version that gave both aural and visual justice to the work would be screened, after much time and work from many people. The film opens with a quote from Frances Hubbard Flaherty, "Oh, if we could only take back with us the singing. Not the songs, but the singing".

There are always three tracks of audio present in the film's duration. A track of the soundscape of the island expands, encircles, and immerges us–wind through trees, bird song, rustling in grass, and so on. Then a track of a scene's main activity focuses us into the narrative, whether talking, an animal passing, or other in-the-frame

activity. The third track is reserved for traditional song, here and there throughout the film, giving us an emotional guidance and experience.

> The types of noises heard in this cut of "Moana" are so natural and believable that a layman wouldn't believe they were recorded five decades after the original capture of footage — and by a different person no less. The sounds heard as a few boys jump into the water, or as some women flatten the bark of a mulberry tree to fashion a dress, have been so accurately welded to the visuals -- in positioning and duration -- that the only logical way for Monica to obtain them would have been to recreate those scenes. (…) In general, sound adds immediacy to the images and changes the tone of several scenes completely. The images don't seem like exotic footage captured by a Western filmmaker sent to a faraway land; instead, it's like something is happening near us, and involving people just like us. (…) A famous sequence from the film depicts a snare. As the natives trap a boar, the beast screeches wildly and loudly, cries that are amplified and impossible to ignore in this cut. This is no longer a bemusing peek at a quaint ritual; it's a horrific scene that divides our sympathies. (Maheshwari, 2014)

That sense of proximity, rather than the ethnographic film highlighting the Otherness, ruptures the time and space, creating a place with the audience to feel close to what they are experiencing. That nearness with the subjects pushes back against a sense of Other, working in this way as a counter-aurality. This is more than just a push towards a temporary empathy, this can be a lasting embodied collective experience to be reflected on time and time again. As cited above, our sympathies divide, we feel as well for the boar as it is real and close to us now as well, both with us in space and time, allowing more present feelings towards the subjects. Working with a silent film from the past, Monica Flaherty strove to give it its soundscape, give it and its subjects a voice. But the past is not always silent, and there are times it is crucial in the archive to make sure we are listening for that voice that is already there, and crucial when designing film sound to make sure it doesn’t get lost again but has the place and space to sound.

IV. 3. Sounding the past towards a future memory

< Figure 18 >

In cinema studies, sometimes films are broken down and divided into two forms, Realism and Formalism. Simply put, Realism strives to be like a slice of the real-world, like a window, while Formalism is more stylized in its film-world, like a canvas. Of course, dividing such a vast and varied art form into two categories is problematic and reductive, and an element of cinema that makes this clear immediately is when cinematic sound is considered. Cinematic sound almost always, unless intentionally designed not to, renders the screen a window. And whether diegetic or non-diegetic, it works to be a believed part of the film-world created–accepted and immersive, only calling attention to its form when necessary. When designing sound for the past, we need to remember that sound will be part of the believed world and be responsible to that. When working with sound from the past, we can also be responsible in allowing that voice to speak for itself in its new context as much as is possible and necessary.

IV.3.a. Giving Voice versus Giving a Place to Listen: Irene Lusztig, *The Motherhood Archives* and *Yours in Sisterhood*

The Motherhood Archives (2013) is a found footage assemblage of over 100 historic maternal education films that explores hidden histories of institutional motherhood and childbirth in the 20th century. While orphaned/archival visual materials are at the heart of the project, archival sound is equally central; the film's meticulously assembled soundtrack-combining field recordings with archival and found sounds-was developed over years, intertwined at every stage with the visual assemblage, and is profoundly important to the ways that the film uses old and abandoned materials to generate new meanings, moods, and discourses.[173]

In 2011 filmmaker Irene Lusztig contacted me about designing sound and composing for the project. She had spent several years buying discarded educational films on eBay and working in historical archives to amass an unusual and fascinating

[173] Colbert, Maile., & Irene Lusztig. 2014. "Sound Designing Motherhood: Irene Lusztig & Maile Colbert Open the Motherhood Archives". *Sounding Out!* Retrieved February 1, 2016, from http://soundstudiesblog.com/2014/03/17/sound-designing-motherhood/

collection of archival films aimed at teaching women how to be pregnant, give birth, and look after babies. *The Motherhood Archives* uses this extraordinary archival treasure trove to form a lyrical essay film excavating hidden histories of childbirth in the twentieth century, illuminating our changing narratives of maternal success and failure, and raising questions about our social and historical constructions of motherhood. I was immediately intrigued by her concept and construction process as well as her desire to work with sound design in a very collaborative manner at an earlier stage in the project than most filmmakers normally would.

< Figure 19 >

In a co-written article in conversational style, discussing the sound, Irene referenced my sound work for filmmaker Rebecca Baron's film, *How Little We Know of Our Neighbors*.[174] "The sound in *How Little We Know of Our Neighbors* in particular does something with natural/unnatural that I was really interested in – field recordings that somehow become other kinds of things as they are layered, transformed, and processed. I think of myself as a documentary maker/artist who is invested in actuality, but not very invested in traditional documentary form, and I think your sound has similar investments and disinvestments. It begins with the sounds of the real world but takes those sounds to very unexpected places that are often quite far from their original context." (Colbert & Lusztig, 2016)

We spoke of the science fiction aspects to the film and its soundtrack, how science fiction can express anxieties about the future, technologies, and things we struggle to control. Our archives could be seen as an attempt to control the future by organizing and cataloging the past, forming a timeline and historic narrative. *The Motherhood Archives* problematizes this, provoking questions about its histories to consider other histories, the ones un-sounded. "So, science fiction feels like a sonic space that totally makes sense for negotiating these maternal anxieties. I've never made a film where the sound comes up so often in post-screening discussions, and generally the question is something like "why is the sound so dark / scary / anxiety-provoking?" It seems very specific to the subject of *The Motherhood Archives*" (Colbert & Lusztig, 2016)

[174] Baron, Rebecca. 2005. *How Little We Know of Our Neighbors*

Sounds can be metaphor in conjunction to their paired visuals. Considering the work I had done on wombscapes, underwater sounds are a reoccurring theme in the film. "Soothing sound of running water muffles newborn cries to prevent the formation of what are called islands of memory." (Lusztig, 2013) An interesting moment happens when the voice over mentions the use of water during a section on the early use of Twilight Sleep.[175] "That description of water literally being used to erase memory allows all the water sounds throughout the film to become a metaphor for the erasure of historical memory." (Colbert & Lusztig, 2016) There is a power to working with "natural" recorded sound sources. Something comes through–a shadow carried from its initial source, the animal listening for that information. As a sound designer, each use becomes a version, still carrying initial source information, then again with further use. "For each sound–some of them going way back–I still remember the source, recording conditions, what was surrounding it (or rather what it was surrounding). They become symbols, but also memory triggers. Now some of them have changed and were saved with this project, so there are generations as well. And the historic archival sounds you (Lusztig) added to it, they come with their own history and memory; your film and their use in it is then added to that." (Colbert & Lusztig, 2016) A living archive.

> ***IL:*** *Speaking of archival sound, one of the most amazing (to me) moments in our collaboration was really close to the end when you sent me the end credit sound. We've actually never talked about this because as soon as you sent it I totally intuitively and immediately knew that it was perfect. The sound is a backwards transformation of the wax cylinder Chopin Waltz recording that is used earlier in the film during the pregnant ballet sequence. There's something so brilliant about your instinct to bring back that very polite, restrained music at the end, but have it reversed – both because it turns something familiar and half-remembered on its head, but also because I think it says something about history that is so attuned to the way the film works. The film thinks about histories of childbirth, but the chronological*

[175] Injections of morphine and scopolamine were used in the early twentieth century to create an amnesic but conscious state during childbirth, with the idea that if there is no memory of the pain, the pain doesn't really exist. Its use was abandoned after women began to have memories of the trauma around its use years later.

> *structure is circular, not linear – which I think of as a kind of challenge to the conventional forward-marching progress narrative. History is always haunting the present, and history is always circular. It makes amazing and beautiful sense that this music that we've heard before returns at the end in this uncanny backwards form.* (Colbert & Lusztig, 2016)

A passive form of listening can be a submission to power. In sound design, sound moves you from within the frame to outside the frame, and there is a power in that, a power used often in the design for propaganda films to affect a large group of peoples' attention, perspective, and emotion at the same time. In an early critique on the sound design for *The Motherhood Archives*, the audience felt they were pulled away from the cultured miracle-of-life feeling around pregnancy and motherhood, with the perceived dark place of the sound drawing them into a sterile, medical history instead. This was intended. There was a concern towards an exploitation of sense, and a need for a critical aurality, for "current sensory productions always respond to current sensory, social, and political problems." (Heuson, 2015, p. 91) And this should be considered when using moving-image artifacts of the past. In designing the soundtrack, I worked towards a contrast against the original contexts of the films, many of which were propaganda. Just the separation from their archive didn't carry the needed information and critique of their origin, the original intent still worked. For their new context, and to problematize their old, they needed the affect, they needed the artist.

< Figure 20 >

Lusztig's next film, *Yours in Sisterhood*, (2018) works with archives in a very different way. *Yours in Sisterhood* is, "a collective portrait of feminist conversation now and forty years ago."[176] Lusztig worked with an archive of letters to the editor of Ms. Magazine, the United States' first mainstream feminist magazine, primarily from the 1970's. Between 2015-2017, she travelled across the country, and filmed hundreds of people reading/performing the letters. The letters were written by women, men, even children, from all different backgrounds, all different sexual orientations, religions, racial, ethnic, physical ability, and political viewpoints. Working for so

[176] From the synopsis of the film, on the official film website, which can be found here: http://yoursinsisterhood.net/

many years with archives, Lusztig is acutely aware of the narratives that form and who has the power to form them, and is in constant and deep critical awareness about her role. The letters recall individual problems, collective problems, revelations, political struggles, "these 70's letters are a powerful invocation of the second-wave feminism slogan, 'the personal is political.'"[177]

< Figure 21 >

Hundreds of letters, the vast majority Lusztig chose did not get originally published. Private and personal, but meant for publication, with intention to be shared and voiced, sitting silently in an archive in the Schlesinger Library on the History of Women in America, where Lusztig spent her summer of 2014 going through box after box. What struck her was that many of the issues that were written about in these letters, women and gender nonconforming people were still struggling with today. Guided by the location and content of a chosen letter, Lusztig would send a call for readers out to the area, and those that responded often did so as something in the letters either hit home or hit hard. They would have a chance for a personal response expressing that after their reading.

The project asks: "What might be revealed in the complicated and slippery space of inviting strangers to act out and respond to 1970s feminism in 2017? What roles does conversation, talking, listening, and embodying have to play in building new spaces of political action? Which bodies and voices are excluded from mainstream feminism and how can we create new, more inclusive feminisms? Is it possible to create a space of feminist listening that is capacious and generous enough

[177] From the director's statement on film website. "The personal is political", also sometimes referred to as, "The private is political", has an interesting relationship with archives as well as filmmaking. Chanted at protests, especially during the second-wave feminism movement in the States, it speaks to the relationship between personal experience and socio-political structures, for example to challenge cultured norms such as the nuclear family structure. The original author of the quote is, rather than disputed, declined by multiple feminist figures of the time, such as Carol Hanisch (whose 1969 essay is titled "The Personal is Political"), Shulamith Firestone, Robin Morgan, and others, rendering the quote a collective statement. Two goals of the statement are an opening up of what are considered private or social matters towards political analysis and discussion, and investigation of systemic oppression towards women beginning in the home. "The personal reflects the political status quo (with the implication that the personal should be examined to provide insight into the political); the personal serves the political status quo; one can make personal choices in response to or protest against the political status quo; ... one's personal choices reveal or reflect one's personal politics; one should make personal choices that are consistent with one's personal politics; personal life and personal politics are indistinguishable." Rust, Paula C. 1995. *Bisexuality and the challenge to lesbian politics: Sex, loyalty, and revolution*. New York: New York University Press. pp329

to include both radical and more conservative voices—a space that can hold both identification and disagreement? What kind of cinematic form can contain the temporality of an urgency that is not emergent? And what can we learn from the archive about using feminist strategies to deal with global crisis?"[178]

Lusztig agreed that there was a relationship with my own thesis and questions, and so agreed that in designing the sound for the film, I could as well work with the Wayback Sound Machine methods and concepts. Early attempts had me thinking of the time of the letters initial writing, and the people who wrote them. I started to build an archive of the sound of recording material, both audio and audio-visual (such as VHS tape, and studio camera silences) to layer in in conjunction with the soundscapes during the moments of transition between readers, and moments they weren't speaking. Lusztig and I worked back and forth on this, she continuously would say something was off, but she couldn't place what that was. I was so locked into my own research; I frustratingly could not figure out what she was referring to. We finally decided to give up and start from the beginning again, and I stripped the film of all the sonic time work I had designed.

After a pause, we met to discuss and attempt another path, and Lusztig expressed something revealing. She said she needed the film to be contemporary, its present needs to be clear for the critique of "nothing has changed really" to come through. This project wasn't about the past, it was about how these voices from the past could still voice the same concerns and issue today, many of which were currently getting worse again (referring specifically to the United States under Trump). The issues themselves were going back in time, the film needed to read present to spotlight that. The sound work from the past I had done was placing the sense of the film out of the now and into the then. In an interesting way, in this case, it was working too well. The Wayback Sound Machine didn't work on a practical level for this case study, but its questions did bring up important issues for the film.

If we run through the project's original schema,[179] it works as a tool. The key question asks, "**What can we gather from sounding the past, and within that, what is the relationship between soundscape and sound design?"** What past is *Yours in Sisterhood* trying to sound? The sound of voices that weren't giving a

[178] From the director's statement: http://yoursinsisterhood.net/directors-statement/

[179] The original schema can be found in the Annex, pp. iv-vi.

platform to voice: voices put into a box, into an archive, silent. **What can giving voice to history and heritage tell us about the past in the present, and what could that mean for our future?** This film is not giving them voice, their voice is already there in the letters; they can speak for themselves, they just need someone to listen. This film is about listening to these voices, in the Now. A critical counter-aurality. The film was already doing this, so what could I contribute, outside of a basic sound mix? Something was still missing; something was still needed. The platform for them to speak was the film itself, yes, but what could amplify these voices without pushing them off this platform? **What is the artist's role in the archive and with sounding the past, and how can that strengthen a critical practice? How can these questions lead to a critical aurality, and a critical sound design?** I considered the relationship of **soundscape → listening → composing and compiling →sound design → past**. This thesis is about disrupting timelines, so let's disrupt. Let's start with **past →soundscape →composing and compiling →listening → sound design**.

I thought about how important geography and place is to these letters and the film, and what their geography could voice as well. Urban or rural, east or west coast, Southern or Midwestern, geography is as well a social and political subject here. Using searchable soundmaps and archives such as Radio Aporee, I searched for the geographic location, sound markers, and key sounds that might signal place, time, season, industry, traffic, population, etc. **What is the archive's role in sounding the past, and whom does this give voice to?** The sound of place can say so much, and including time, how these places may have changed or stayed the same between the time of the letter writer, and the time of its performer in the film. Lusztig liked the sound of this but had also gotten used to the voices without much background, as they were initially recorded on lavalier microphones, the small lapel microphones that attach to the clothing of the subject. I'm continuously trying to beseech filmmakers to not record their interviews on lavalier mics, which became a documentary production standard, as aside from the constant issues with microphones bumped and clothing sound, there is a vocal isolation that I find limiting, taking out all of the rich sonic information that could be part of that soundtrack; including the soundscape, the acoustics of the space, and other diverse sounds that I'm always having to create in post-production to help breathe life back into those moments. The lavalier is of course popular because it allows a small production hands-free sound recording, but there are

good onboard mic mount options these days, or even a simultaneous handheld sound recorder set to record at the same time.

Lusztig had gotten used to the sound of the isolated voices, though acknowledged something was missing. The compromise was the built/composed time/place-expressive soundscapes low in the mix, in the background. During the Premiere of the film in a large theater in Berlin, Lusztig realized the soundscape was not taking over the voices but worked in a register where all sounds could be sounded and amplify each other, rather than overtake, designed this way considering biophony and the Acoustic Niche Hypothesis. She found herself wanting the sound of place present and had the film re-mixed to bring the designed soundscapes back up.

"Giving voice," versus a place to listen, an amplified platform, which soundscape can contribute. In *Immediations: The Humanitarian Impulse in Documentary*, (2017) film and media, and voice studies scholar, Pooja Rangan, writes about counter-discourse in documentary in Chapter 3, "Having a Voice". She refers to a problematic video made in 2009 from the autism research foundation, Autism Speaks. (Rangan, 2017, p. 103) "I Am Autism", (2019) [180] the four-minute-long video, used cinematic horror tropes, audio and visual, paired with home movie aesthetics, to press urgency in finding a cure for autism by highlighting silence in the children it depicts, depicting them as having been rendered silent by the film's villain, Autism. Unlike the children, the Autism-villain does speak, in a threatening off-screen voice about all the horrors it will bring. In the second half, depicting a post-cure, the happy families are depicted in portrait to uplifting music with the children's voices laughing. Voices, off-screen again, tell Autism they are in it together, to conquer and free their children from their silent prisons, "We have a voice!" (Rangan, 2017, p. 104) Many objected to the video, including autistic individuals who said it did not represent them, did not speak for them; that they do have a voice, and the attempts of the video in fact silence them and make it difficult to be heard.[181] The

[180] "I Am Autism," (2009), directed by Alfonso Cuarón, from the organization Autism Speaks, the largest autism advocacy organization in the United States. Autism Speaks holds a view of Autism as a disease to be worked towards curing, a position many autistic activists state is problematic, and call for neurodiversity.

[181] "See Biever, "Voices of Autism 'Silenced.'" Others have criticized Autism Speaks for mobilizing stereotypes of autistics as violent or destructive as a way of emphasizing the urgency of their cause and expressed hurt at being stigmatized as a source of hardship and torment for their families. "(Ragan, 2017, p. 210)

ventriloquism, as Rangan puts it excellently, of the voice speaking for and silencing, of the aurality of autism in the video, was a dangerous depiction, perpetuating the idea that those with autism ruin the lives, silently, of those around them, along with their own. Ragan asks, what does it mean to be someone or something's mouthpiece? It came from good intensions, humanitarian intensions, to give the voiceless a voice. But speaking for isn't necessarily giving voice, it can be taking agency. Even defining sounding as voice pushes aside people who don't sound with their voice for a myriad of reasons. Many with autism who sound with a range of verbal capacity say, "as a spectrum of neurological diversity that they wish to persevere, and they assert the value of atypical neurological development as a normal human variation." (Rangan, 2017, p. 106) Autism is part of their identity, and they want the agency to voice this themselves, and to be listened to. Rather than giving voice, give a place to listen.

IV.3.b. Echoes of Time in the Walls: *The American Sector*

< Figure 22 >

The American Sector (2020) came to a similar conclusion as *Yours in Sisterhood* with the addition of older sounding material primarily placing it too far in the past, when it was deeply important to the concept that the audience sense time looping, history repeating into the present. "Now we are getting walls again," someone in the film says (this film as well in the time of Trump). These are time sensitive materials. Filmmakers Courtney Stephens and Pacho Velez, like Lusztig, travelled around the continental United States for over a three-year period speaking with people, the object and subject being large panels of the Berlin Wall that travelled over the States for various reasons, in various ways, from Germany since the Wall's fall in 1989. An archive on a macro level, scattered across the landscape, changing the landscape, these pieces would have a different affect on those that shared the space with them, ranging from public to private, passer-by to caretaker. Velez and Stephens would converse with these people about what they knew of where it came from, how it got there, what it stood for once, what it stood for when it fell, and what it means to them now. "Their film begins as a mysterious travelogue, inviting us to consider the slabs in their varied settings—public parks and private property, museums and

roadsides, universities and government offices. Sometimes the new owner has provided curatorial context; sometimes the monolith seems transplanted from an unknown world."[182] The film ping-pongs through history and history repeating, walls and oppression discussed, sometimes about the past, sometimes about the present and future. In a section speaking with children, asking them about history, the narrative they are learning is reflected in their answer: that Reagan commanded the wall down, and so it fell. The same story I witnessed being reported on back during its broadcast, his voice played and repeated. I can call it up now in my personal playback with no time degradation. The same story told generation after generation; Stephens and Velez give a nudge and disruption; the international audience laughs.

In a similar relationship with the Wayback Sound Machine schema as *Yours in Sisterhood*, my initial attempts to play around with my archive of recording material was placing the film too far back in time. Except for the sections where there was actual broadcast or VHS tape recording from the time, primarily we needed the film to have a present aurality for those reflections to surface. I designed searching out geography much in the same way as *Yours in Sisterhood*, and with much the same soundmaps and geo-searchable sound archives as tools. There was one interesting acceptation to the sound-time rule the film seemed to be calling for, which may have to do with how music is processed differently than other sounds in soundscapes, or perhaps it speaks to the power of the cultural associations within the particular genre. For whatever the reason, we did use throughout the film tracks from an archive of Muzak found on archive.org, digitized from cassette from the 1980's, here and there for hotel or corporate spaces,.[183] Interestingly, Muzak could be considered at the time a sort of counter-aurality, with the aim to neutralize the soundscape towards a relaxed, non-informative sonic background, conducive to capital and consumption, a dark acousmatic.

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[182] Linden, Sheri. 2020. "'The American Sector': Film Review | Berlin 2020". *Hollywood Reporter*. Retrieved June 20, 2020: https://www.hollywoodreporter.com/review/american-sector-1278799

[183] Muzak is a registered brand of background music made for public spaces, especially stores, though it became as well known as "elevator music". The music was made with the idea of sonic background in mind, to put people at ease and encourage more shopping. I write is, rather than was, as they are still around, as Mood Media, specializing in business music. Retrieved March 10, 2020: https://us.moodmedia.com/ga/muzak-background-music/ and, Owen, David. 2006. "The Soundtrack of Your Life, Muzak in the realm of retail theatre." *The New Yorker*: https://www.newyorker.com/magazine/2006/04/10/the-soundtrack-of-your-life

With *The American Sector*, geography took on sociopolitical roles, and aural extension was used in collaboration with challenge, highlighting the various situations and locations these pieces of the wall landed in–the museum with its voice over of historic authority echoing in its marble halls, the Florida Hard Rock Café with the thumping soundscape of classic rock pumped out of manicured gardens, peppered with screams from the roller coaster near-by, designed to excite and overwhelm, the rich Malibu private home with its paid-for quite nature soundscape–each place speaks as well, sometimes overlaps, to sound the complicated tapestry of that complicated country, to amplify the voices speaking about their relationship with that piece of the past to the now. The extensions of place throughout the film allows for the moments of aural time to contrast and compare, a rupture to reflect upon, moments to make that past sensible to the present–the news broadcast, the home movie, the video capture of a man swimming to a possible freedom–the symbols of it all. And how those symbols are taught to next generations, how those symbols become so important to a narrative their actual history gets left behind. Aural extension and challenge weave an underlying sonic tapestry to amplify, present, and represent this with a sonic sensibility. Asking again, **what can giving voice to history and heritage tell us about the past in the present, and what can that mean for our future?** With *The American Sector,* we make sensible a history repeating a broken, scattered narrative. Co-director Stephens reflects on this in the next section, in the sound survey.

As a sound designer, I can mix the world. I can bring the world in, infuse the image. I can consider the emotional scape, the narrative points, and the sound of the world being created can reflect and guide this. Much like how we listen. We take all sounds in, but in an infinity of ways, processed in an infinity of paths–depending on mood, culture, history, time–the moment we are in. What we choose to listen to, what becomes background, what is reflected, rejected, amplified in our processing. We edit our senses, all the time. Cinema reflects this–time slows down, time speeds up, time moves backwards, time, at times, seems to repeat.

IV.4.c. Sound Survey: Why is sounding the past/sound from the past important to your work?

The conception of this thesis project involved the realization that of course other artists and researchers were asking the same or similar questions to, **what can we gather from sounding the past?** From that moment on the Santiago Way to the initial research and first project, with a new light shown on the concept, I began to notice when others were asking the same. Recognizing this led me to the desire to have the access to reference and explore these projects in one place. In a sense, that is part of the goal of this thesis. Which led me to ask the case-study project authors this same question. The full Sound Survey sent can be found in the Annex,[184] but I will as well highlight the questions here with some of the answers I received related to the films and projects written about.

My initial question was my primary thesis question that this dissertation has been researching and exploring, asking ***what can we gather from sounding the past, and within that, what is the relationship between soundscape and sound design?*** I followed this up by asking in the survey: *what possible purposes come to your mind when considering sounding the past? In what ways are sounding the past/using sound from the past important to this work?* The second part to this initial section asked: *Do you think there is a relationship(s) between listening to our soundscapes and sound design? Can you describe those possible relationships?*

Courtney Stephens, co-director of *The American Sector*, with whom I am currently finishing sound design for a short film working with archival material as well, points out that even when imperceptible to viewers, the past sounds different, our sense of space about orientation rather than information. "I remember hearing (…) about mid-century instruments in terms of cars–metal, metal on metal, car crashes, industry–and that elements of jazz at that time had the sound of the real world, were interpolated from the material life of the people playing it, how you get around and what you hear walking down the street. Those are qualities that convey the relative safety/danger, tangibility of life in different times." This was a point proven for us when initially attempting to work with the sound of recording material from the late 1980's when designing for *The American Sector.* While time-appropriate to the event, the fall of the Berlin Wall, the sonic time stamp pushed the visuals and story too far into the past, the film needed to be staged in the now.

[184] The full sound survey can be found in the Annex, pp. vii-ix.

For a decade now I've been working through various projects and capacities with the arts and culture organization Binaural/Nodar, located in the rural villages of the Portuguese region of Viseu Dão Lafões. Since 2004, Binaural has been an interdisciplinary ongoing project in the areas of soundscape studies, sound and media arts, audiovisual ethnographic documentary, radio and editorial production, and ongoing international and national artist residencies throughout the year focusing on, "media art in a rural context".[185] Binaural produced the case-study projects written about in this thesis, *Passagiera em* Casa and *Passagiera australis*. My recent work with Binaural, as of the last five years, and in conjunction and application with the research in this thesis, has been consultation and work on specific projects with Binaural/Nodar's archive, and preparation to work it towards a "living archive" in the upcoming years.

Binaural/Nodar's residencies are in and of themselves a living archive, the region holds many traditions, cultures, and technologies that have remained essentially the same for many generations. Binaural/Nodar's residencies and activities facilitate interactions and collaborations with the activity and people of the villages, and contemporary media artists and researchers. Along with regular ethnographic audio-visual documentations of the region, documentations of these activities and projects, as well as outcomes, are included in the archive, creating a vibrant, fluid, and ever evolving project, accessible virtually as well, which will be the next focus in the following years. I asked Binaural/Nodar's director, Luis Costa, to take part in the survey, having worked so much on these themes together. He said that for him, a "foundational purpose that establishes our connections between sound and past is the relevance of memory to counterbalance the current tendency for an exclusive focus on either present realities and events or future projections." He continues that there are a range of "revelations" from the past that are often underrepresented, that sound can offer crucial access towards apprehending, "how communities and societies evolved and what kinds of social-technological-economical-environmental choices we made along the course of time." A theme that continues to be brought up with this survey is access and availability.

This is a theme that often goes hand-in-hand with considering archives, which has been discussed at length in this thesis, but we can also consider what can be made

[185] Binaural/Nodar's website can be found here: https://www.binauralmedia.org/

available within our own memories, and in which ways can we activate and make those available. Movement artist and researcher Ana Monteiro, whom I had created *Soundwalk-walk* with, in consideration to our project considered again sensory memory our body holds, and how it can be activated and made available with sound: "By relieving those memories one has the opportunity to rewrite them in a way." The consideration of listening while moving can be applied as well to the soundwalk of the past done with sound artist and engineer Rui Costa, who wrote in response to this question on how sounding the past can change the paradigm of considering the past silent. He speaks specifically to the project we collaborated on, which attempts to sound a past event that happened before technology allowed for sound recording and reproduction. He cites one of our objectives, which was to "bring us (the audience) to the past, to provide a more complete sense/sensation of it, and thus increase our level of understanding about it." He stresses sound allows a more embodied and immersive was to access past, rather than simply gather information about it. On our project specifically:

> Rádio Terramoto was conceived as a live radio broadcast and soundwalk from the day of the great Lisbon earthquake in All Saints Day of 1755. Gathering literary and historical accounts from that time and the knowledge of the psycho-social context of the city (e.g.: extreme religiousness and mysticism) and its architecture/terrain, we came up with a sequence of events (first the quake, then fires and finally a tsunami) and a path along those events, starting at a high vantage point and ending at the riverfront. So, what we did was a sort of speculative translation of written accounts into sound using other sources of knowledge and a lot of artistic freedom to shape the contours of the sound piece.
>
> All in all, this project was developed as a sort of speculative recreation of a past event into sound through the translation of multiple sources of first-hand information and scientific knowledge about it into sound cues.

Costa goes on to describe how sound design in any time-based media helps place the audience with sound cues into situations and scenes, space and time, "pulls the audience to the physical space", or guides them emotionally or psychologically,

"pulls them to their inner space. Listening closely to our soundscapes and its layers and nuances establishes a deeper experience of that place, and Costa believes that that deep listening in sound design can, "contribute to break the association of found sounds to the expected actions or events that they originate from and, thus, to enrich the whole artistic experience."

The second part to the initial survey question also follows my thesis themes and schema, asking ***what can giving voice to history and heritage tell us about the past in the present, and what could that mean for our future?*** I followed with asking if sound design/art can provide voice to history and/or heritage. All respondents felt it can, and that in the projects we worked on together it did; Stephens referring to the act as creating a form of archeology to a scene or place, and the ability film sound has to extend outwards past what is visible on the screen and extend into the "unconscious constituents of the seen". In *The American Sector*, she makes the example of this with the Berlin Wall, and the construction, destruction, and reconstruction sounds used throughout. Monteiro highlights how sound can give, "voice to unheard stories and deconstruct hegemonic narratives," which was exactly our focus and attempt with the locations of *Soundwalk-walk*, especially in the case of the buried history of the Belem Colonial/Tropical Garden. Luis Costa puts beautifully that sound practices relating to the past and memory are like canvases, with the ability to give voice to "any aspect of existence, past, present, or future. They can even give voice to inexistence, to emptiness, or to apathy. (…) The search for subtle and unrevealed meanings that can be hidden in past evocations." Rui Costa's statement, that history and heritage can only have a voice if one lets them speak, also reminds us that these lost narratives weren't voiceless, but rendered so with choices through time; sometimes it's not a matter of "giving voice", but of giving a place for these voices to speak. "If we depict history and heritage only in broad strokes, expecting the same situations to create the same sounds, we are not giving any meaningful voice to it but rather, quite contrarily, we are silencing it because we are saying that we already know everything about it and we can define it and represent it in totally recognizable ways."

The second part to the question was if giving a voice to history and/or heritage could give information towards our future, and what can sounding the past/using sound from the past say in our present about our future (for example with issues such

as climate change, overpopulation, immigration, etc.)? Stephens wrote that sounding the past can "ground us in different time scales", pointing out that being and thinking outside the moment holds political implications, the future. She gives an example:

> Sound is ethereal, invisible, but stands to ground us in ways that what is immediately perceptible visually cannot. Putting a visual overlay of all the past iterations of a block in New York, for example, would be a pretty large intervention and possibly hard to extract information from, but including soundscapes of a New York region that has not been built up with human construction, gives us a sense of the place's unconscious in a different, more discernible way. It asks us to consider that there is more than one word or sense of a place's meaning.

The last part to this section also follows the thesis main questions and the schema, asking ***what is the artist's role in the archive and with sounding the past, and how can that strengthen a critical practice? How can these questions lead to a critical aurality, and a critical sound design?*** I asked if they thought it was ok to take "artistic license" with archival documents, for example using a sound or sounds with moving image archival footage that is not its original soundtrack, or taking a "historic" sound recording and using it out of context in an artistic work. Stephens' response was close to my own conclusions with this work, in that if we can accept the complexity of not having a streamlined list of guidelines that fit every case, it always depends on the project. This is where being mindful and critical with aurality and aural culture is important. As Stephens put it, "Manipulating an audience to believe something is happening to prove a point that is otherwise un-provable because it isn't true, doesn't work for me. Creating a sense of the unconscious of the place, in a way that may ride the line of fiction, does." Monteiro points out as well the importance of the case-by-case and being mindful, especially on how, where, and for whom the work is made, and understanding that manipulation of meanings can happen. Costa points out that in or out of context, the use of a historic sound recording as well will always depend on the listener's experience.

The second half of the survey I asked only those who worked on film projects with me to respond to. The first question following up on the last question of the first

half, and asking: *Do you think there is an ethical responsibility for moving image archival footage taken out of its original context to "sound correct" or "sound possible"? In your opinion, is a rigor to "expected sound" important when designing sound from the past? Or is an expressive acousmatic sound design more appropriate? Which do you feel is more ethical and why?*

For Stephens from *The American Sector*, she once again sites that each work and context is different; that there aren't one size fits all rules, and that the way to honor the potential of an image archive if to move the audience to care. For Costa in consideration to the Binaural Archive works, there should be an ethical responsibility, not so much from an institutional level, but individual morals. He continues that he thinks that sounds being used outside their original recording and geo-social context are creative decisions and choices artists make, and while he prefers sounds in their context, he doesn't think ones used outside it are less ethical. An important aspect to the archive itself will be to have both examples available with plenty of grounding information.

An interesting divergence happened with the responses when I asked, "Do you think that sound design can be/should be read as critically as its visual counter-part?" Stephens felt no, that visuality and visual culture had more baggage and violence built into it. "Representation visually is tied to profiling, stereotype, the violence of typologizing, and so much other history that sound has a bit more lenience in relationship to." But Costa feels that yes, being the often under-dog of its visual counterpart it can be overlooked, but "the creative decisions associated with a sound design production are both specific and complex and can have a decisive impact on the audience's perception of any audiovisual work that uses sound design." I asked if they could give an example from the film work in question where the sound or sounds give a critical impact, especially in consideration to the concept of sounding the past/using sound from the past, an example of what they consider the most successful and/or least successful element or approach to sonic design for the work in question, and to describe. Stephens sited the section in *The American Sector* where I created a sound collage around different radio stations and places visited in a road trip montage, giving a "sense of transience and the various dimensions of travel, the passage of personal narratives into media, the passage of time and space, and more." Binaural/Nodar's works made from the archive all included "sound design tools and

techniques and all of them included samples of sounds from the present which are also sounds from the past as all recordings were made locally but were connected to ancestral agricultural practices. (…)"

I particularly appreciate Stephens' response to, ***what is the archive's role in sounding the past, and whom does this give voice to?*** "The space of dreams and a site of analysis." Costa pointed out that a benefit of an archive, as opposed to less intentional collection of sounds, as being organized has the merit of clear contextualizing; giving its users, such as filmmakers and sound designers, potentially better information and access, and expand knowledge of the place and time the sounds are from, possibly having interesting and affective impacts on projects.

I asked if they thought audiences are culturally more prepared for abstract and expressive visuals over sounds? And in what ways do they think sound design could give cinema a sense of place, if there is a section in the film they feel this happens? Costa feels there is an increasing allowance and expectation towards more abstract and expressive sound, and as well connects this to newer, emerging filmmakers and platforms allowing more daring work. Stephens had a good point that it depends on the priming of the audience; the transitions from diegetic to more abstract sounds could be potentially difficult. She speculates that celluloid film may allow more for abstraction than higher resolutions, where she feels reality might need to be matched aurally.

Considering the usefulness of direct feedback from others on these questions, and related to the survey, I was reminded of my invitation to participate in *Sounding Out! Sound Studies Journal's* "Comment Klatsch",[186] where I had begun to write regularly years ago, often exploring this thesis' questions and themes. This was a follow up to my World Listening Month post, an early version of the original article that led to here.[187] Editor-in-Chief Jennifer Stoever, mentioned before in the section on the Binghamton Historical Soundwalk Project in Chapter 2, invited me to ask a

[186] The full thread can be found here: https://soundstudiesblog.com/2013/08/01/sound-off-comment-klatsch-8-sounds-from-the-past/

[187] Colbert, Maile. 2013. "Wayback Sound Machine: Sound Through Time, Space, and Place." *Sounding Out!* Binghamton, New York: SUNY Binghamton

question to provoke a discussion amongst the group of sound scholars. Following up on my earliest research into this work, and clearly an early form of my thesis question, I asked, "What information can sound from the past carry and how might that be useful or important to us in the present?"

Dr. Regina Bradley wrote that the question had her considering connections and overlaps between "sound, silence, and black trauma during slavery and the residual effects of those sounds. How does sounding slavery reflect in more contemporary manifestations of black cultural expression?" Bradley was working on a project that as well explored connections of the sonic and social-historical between slavery, hip-hop, and capitalism in Edward P. Jones historical novel, *The Known World*, (2003) on slavery. It was interesting and revealing to experience how the question could be applied to not only different disciplines, but also different forms, in this case consideration of sonic elements of the past in literature. Dr. Stoever points out that literary forms have been "recording" past sounds for a long time, for "playback in reader's imaginations," which some neuroscientists have argued gives the same signals neurologically that the act of hearing does. The translation of sound to text in these forms can also give us cultural clues into how people heard then, and this should as well be considered when writing for the past. Stoever also points out that the idea of conserving and preserving sound, such as in a museum, is fairly new, as we tend to assume visual media gives us the information about the past we are wanting. She asks, why not sound?

Dr. Seth Horowitz, a neuroscientist who studies comparative and human hearing and the musical mind, points out that, "If visual media tells us something of the past, sound is nothing but past; there is no present (…) it might suggest there is nothing to preserve." Reminding us that the sound we are hearing now, if we think of time in the ever-forward moving line we tend to think of it in, came from an event that forever already happened. He follows up that this wouldn't decrease the work that comes from this question, but rather increase its impact, giving it space in the imaginary. "…The sonic home is not an object, but a kind of flexible, membranous liquid, waves beating against beaches, but never fully located at anyone. Maile suggested a way to understand the oppression of the present by listening to the sounds of oppression from the past. This makes the conservation act a political one, one that is not looking toward a horizon of realism, but a shifting set of possibilities. (…) As

we remember the sounds of the past, we are also creating new pathways of sonic experience in the present."

CHAPTER V: When everything became wayback, sound in the time of Covid-19

> The writer twists language, he makes it vibrate, embraces it and splits it in order to tear the percept out of the perceptions, the affect out of the affections, the sensation out of the opinion, with a view–hopefully–to that people that is still missing (...) this is the task of any art, and it is in the same way that painting and music tear out of colours and sounds the new chords, the plastic or melodic landscapes or the rhythmic characters that lift them up to the song of the earth or the cry of Men: that which constitutes the tone, the health, a visual or sound block. (Deleuze & Guattari, 1994, pp. 166-167)

Sensations from opinions, from expression of those opinions (with a clear nod to the subjective), and with hopefully a view to the people that are still missing, a listen to the voices still missing. When Rancière writes on this paragraph in his essay,

"Aesthetic Separation, Aesthetic Community: Scenes from the Aesthetic Regime of Art" (Rancière, 2008, p. 4), he describes the link to a public artwork and human community as a "transformed sensation". I resonate with this description and argue our archives should be more open and accessible to the public, and accessible and expressive to the community through public artworks using them, and public artworks returning to them, a network of transformed sensation and sensorial information. Our archives contain voices from the past, and clues to what voices are missing or unheard, and why they are missing and unheard.

> What the artist does is weave a new sensory fabric by tearing percepts and affects out the perceptions and affections that constitute the fabric of ordinary experience. Weaving this new fabric means creating a form of common expression, or a form of expression of the community, namely 'the song of the earth or the cry of men'. What is common is 'sensation'. The human beings are tied together by a certain sensory fabric, I would say a certain distribution of the sensible, which defines their way of being together and politics is about the transformation of the sensory fabric of the 'being together'. (Rancière, 2008, p. 3)

Humanity tied together by a network of woven sensation, like a shared soundscape that brings both information as well as experience, that weaves through time and space, expanding. Rancière speaks of a vibration "speaking to the ears of the future", (2008, p. 3) transmitting protest, suffering, and struggle. Artists have that ability to pluck those threads in that "sensory fabric" and cause vibrations that ripple through time; this describes well the purpose of the *Wayback Sound Machine*. "The artists voice of the people is the voice of the people to come". They "superimpose to that sensorium another sensorium organized around that which is specific to their own power, sound, and absence. Staging a conflict between the two sensory worlds" (Rancière, 2008, p. 4). A conflict, a rupture, of time and place. And in that space, a bridging and joining and tying and knotting different times with everything a document of time can carry, this is what sounding the past can do. It is a power, and it is a power little understood, or rarely considered, giving it further power. As we have read in different forms and studies, the human animal already takes in sound and responds to sound in ways that have been developed our entire existence and even

before. With each present act of emitting, omitting, recording, receiving, playback, we add information layer upon layer to this history embodied. There is a call for a critical aurality in all stages of sonic production, and at all points of listening–a consideration of the aspects and politics of sound, as well as the elements to the sonic world that make it so compelling, so mysterious, so hidden at times within its own being taken for granted. A vibration that affects, and a vibration that joins.

V. I. Sounding Our Crisis, Part 2:

Expansion and extension, in time and space, and in soundscape and cinema. **What can we gather from sounding the past, and within that, what is the relationship between soundscape and sound design?** And furthermore, what is the function of this question in the time of Covid-19? I began writing what is supposed to be my conclusive chapter when a pandemic crept across the globe. Time shifts, feels like a pause, gets interrupted by children home, or emergency texts going off, our Zooms and Skypes ringing, hourly checks of creeping data maps where loved ones live. The luxurious and real stress of shifting online, a vast chunk of the world becomes framed. That other chunk of the world, out our windows, also framed. Behind our walls, safe and surreal, sound connecting all. As artists of various media attempt to capture some essence of this time, it may be found that fragments, notes, moments, and blurs, are what express better our experience.

They once thought viruses were poisons, the word's roots in Latin for poison. Then they thought they were life forms. Now they are seen as an in-between, the area between living and non-living…the stuff of science fiction and horror.

> In the late 19th century researchers realized that certain diseases, including rabies and foot-and-mouth, were caused by particles that seemed to behave like bacteria but were much smaller. Because they were clearly biological themselves and could be spread from one victim to another with obvious biological effects, viruses were then thought to be the simplest of all living, gene-bearing life-forms.[188]

[188] Villareal, Luis P. 2008. "Are Viruses Alive?" *Scientific American*. Retrieved June 15, 2020: https://www.scientificamerican.com/article/are-viruses-alive-2004/

Viruses are little blobs of complex biochemical, nucleic acids like DNA or RNA, surrounded by a protein layer that may help with infection, but "lacks essential systems for metabolic functions", what we call life. The virus infects a cell, sheds, blurs its genes with the cell's replication system to make more viral protein, which assemble and infect, shed, blur other cells. They are frighteningly efficient in their in-between living and non-living state.

When Covid hit, I started writing in pencil again, unsure of everything, reliant on an ability to erase and revise with ample gesture. I felt anxious until I could accept a fragmented interior with a hundred versions, everything in process: process over progress. But how can this serve my thesis? How can this serve my thesis question? **What can we gather from sounding the past**, and what is past when our entire world changed, when we're moving in a perpetual now, unsure what future will mean?

Having been so focused on the relationship between archives and the past in this thesis, I primarily placed archives in the past. In my introduction, I state, "…critical listening and aurality towards sound design, especially when using sound from the past (archives) or designing sound for the past (representation)." I spoke of a further past that placed listening as an act for survival, before it led to aesthetic choices and forms. I wrote of the subjectivity of sound perception. I wrote:

> Artists and sound designers working with and considering sound from the past can create sonic compositions and databases that could help us to remember and think about our heritage, to feel our heritage. A fluid museum and living archive to give voice to the past in the present, while creating new experience and highlighting information within the complexity of our changing soundscapes, over a period that usually defies our comprehension. **What can we gather from sounding the past, and within that, what is the relationship between soundscape and sound design?**

When Covid-19 hit, everything became past. It wasn't so much the sense of living in a now, rather trying to grapple with how much of that will be gone, will be Past, from our not so long ago Now. These are times that cannot be felt or thought dualistically. There will be some "good" changes, certainly. We hope, collectively, from such a large and global life changing event, for new forms, better forms. We

sigh, collectively, wondering if that is possible. But certainly, there will be no going back, and this can be difficult to grasp.

I began, in this new virtual life, to see two things forming. The importance of the archive, and the importance of forming archives, especially media archives, and especially sound archives. When Covid-19 first hit, I couldn't write this. A thing like a thesis felt abstract and strange, a thing like a thesis spoke to a past of seminars and conferences and lectures and meetings and screening and festivals, moments of social interaction, their form taken for granted. A thing like a thesis spoke to a future of submission and defense and publication, whispered of future teaching jobs or post docs, perhaps a book. A thing like my thesis was not connecting to my initial lock-down days of anxiety over family and friends in New York (one of the worst initial epicenters, messages coming from a war zone), worry over being an "at-risk" status with a primary immune deficiency, time and thought in constant interruption from a stir-crazy young child confined. The need and inability to express what was happening was choking me.

The filmmaker Irene Lusztig, whose films and our collaborations I highlight in the previous chapter, created a group for teachers and artists that found themselves suddenly shifting to online with their work and students. She called the group, and a collective forming syllabus, *Radical Self-Quarantine*.[189] Smaller breakout groups began to form. The groups began to meet virtually and collectively, initially meetings always needing space and time to check in and figure out how are we feeling, and what are we going to try and do? Mostly comprised of filmmakers, everyone spoke of not being able to shoot, not being able to work with others in-person, not being able to research collections and archives that were not available in online forms, of not being sure, even if they could get around these obstacles, of what sort of future they were forming a film for. What will happen to the festivals? To the museums and galleries? What sort of distribution paths will be available? Where will a future audience be? No one makes films solely for film's sake.

Then there was our Now. We discussed how this present might be reflected through present works in the future. Someone mentioned productivity, someone else

[189] The self-published and collective document can be found here, retrieved June 17, 2020: https://docs.google.com/document/d/1QcvYkG0Jgu8WM5kxp_UAKt6PrDq7yTx3bjD-HPUv8Ks/edit

asked what productivity could even mean in our current situation. Maybe productivity was a problem? What could production look like right now? And what produced right now could reflect towards the future what we were living through. This will be a moment that our Future may want to visit. I considered the Influenza pandemic of 1918 and found that the most compelling and complete feeling archives bear media of different forms, curated in a fragmentary form, such as the selected records page from the United States National Archives.[190] The fragments, taken together, form a fluid and shifting narrative. A narrative that allows more a sense of the scattering across the geography of the event. I only wish I could hear them, my imagination attempting to fill that gap. I look at them, and play a file of yet another sonification, this time a data translation of the coronavirus spike protein, the sound oddly soothing, which paired with the 1918 flu archive gave a weird and interesting affect. The creator of the sonification, Markus Buehler, a professor at MIT, claims the sound revealed details that visual instruments like microscopes couldn't. While pretty, it also can reveal minute mutations in the spikes, which the virus uses to infect us. Professor Buehler feels the beauty and calming effect of the music is appropriate to the nature of the virus as well–tricking us, tricking our bodies.[191]

The form that seems to make the most sense to this current event, that might capture the fragmentation for the future, would keep its fragmented form. My quarantine breakout group began to collectively form an archive of notes and fragments in text, still and moving image, and sound. Documentary and essay form, and even science fiction, which made a new sort of sense useful towards conveying our reality.

We were not the only ones doing this. The urge to express what was being experienced was widespread, and creative archives were building everywhere. It seemed everyone with recording equipment was recording out their windows. In an interview with Digicult, Salomé Voegelin describes, "I understand sound, exactly

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[190]The curated selections from the National Archive can be found here, retrieved June 15, 2020: https://www.archives.gov/exhibits/influenza-epidemic/records-list.html

[191] Taylor, Tegan. 2020. "Scientists translate coronavirus spike protein into music, revealing more about its structure." *ABC News*. Retrieved on May 18, 2020: https://www.abc.net.au/news/health/2020-04-06/coronavirus-music-scientists-translate-spike-proteins-melody/12124424?fbclid=IwAR2zaVsBbQZSCCMsOuoBAZqOxkbTwaAJX48Gu1mr8SL9-GioXbRlBRuI4e8

because of its formless in-between nature".[192] With the call for self-isolation observed came a quieting and change in many soundscapes. Less traffic, on roads and in air, bars, restaurants, cafés closed, for a little while even construction ceased. Many took photos of the sky outside their windows, brighter and sharper each week passing.[193] Many recorded the changed sound of their changed environments outside windows, the soundscape revealing a diversity and distance different than before. Sometimes the interior is caught–a reflection of the photo taker, a phantom of anxious eyes in those framed clouds. That birdsong chorus with the addition of stir-crazy screaming children in the other room. Could we also find a way to sound the interior of the person recording in these moments, their thoughts and feelings in all the complication?

The initial act of recording out the window and posting, I admit to reacting against some at first, in the sense the act seemed more about the individual desire to collect in one's name, until sound maps allowed these recordings to be more a collective act and the larger picture emerged. Radio Aporee created a section of their sound map titled, "Soundscapes in the Pandemic,"[194] which allowed for a visual and geographical component to the recording and listening, and a sense of alone, together. Pandemic soundscapes: collective singing and instrument performing from balconies in Madrid, ambulances and field hospitals in the UK, a hauntingly quiet urban park here in the center of Lisbon from local phonographer Carlos Santos, more sirens in Belgium. I hold my breath as I virtually cross the Atlantic Ocean to New York. It sounds as if much of the usual soundscape–one I have had a relationship with for so long–has been notched out, sound-by-sound, leaving the sirens. It is heartbreaking, moving, and transformative. It will be an important document for the future, in a searchable and accessible form, story and meta-data with context and place.

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[192]Pisano, Leandro. 2020. "The Political Possibility of Sound, Interview with Salomé Voegelin," *Digitcult*. Retrieved June 17, 2020: http://digicult.it/articles/the-political-possibility-of-sound-interview-with-salome-voegelin/

[193] A Facebook Group project was created called, View from my window, a collective forming archive of photos documenting the view outside windows all over the world: https://www.facebook.com/groups/viewfrommywindow/about/

[194] The soundmap can be accessed and heard here: https://aporee.org/maps/work/projects.php?project=corona

> 480 Greenwich St, New York, NY, 10006, USA. Carlo Patrao. 3:49min. The World Trade Center transportation hub serves 11 subway lines, as well as PATH trains to New Jersey. It's estimated that 400,000 commuters and tourists walk through the Oculus on a daily basis. During the covid-19 quarantine, only a few people could be seen. One person was dancing alone in the middle of the plaza, while several guards were observing. The bustling sound of the commuters was substituted by the monotonous and repetitive escalator announcement.[195]

Cities and Memory,[196] a newer sound map archive formed in 2014 that seems inspired by Radio Aporee, created the project #StayHome Sounds. Cities and Memory takes an interesting step towards a living archive by pairing each location recording with a "reimagined sound that presents that place and time as somewhere else." [197] A user can create their own mix, play and perform between the two. #StayHome Sounds pairs the recordings with personal stories from the recordist. I listen to an eerily quiet recording of Times Square. Without its vehicle and pedestrian sounds, its technology–humming and buzzing, still fully lit and active–dominates the soundscape. The recordist, Geoff Gersh, writes:

> Times Square has become a ghost town and on Monday March 23rd at 1am, I went to document the sound of Times Square at the moment. Absent are the people, the traffic, the energy. Mechanical sounds from the nearby buildings now dominate the soundscape. Aside from law enforcement stationed every few blocks, not many people were in Times Square, at most maybe 10 at one point. The community copes in different ways. Most people are taking this seriously and staying indoors and some go about their lives with little change or adjustment that's within their control. NYC

[195] Ibid.

[196] Retrieved June 17, 2020: https://citiesandmemory.com/

[197] Retrieved June 17, 2020: https://citiesandmemory.com/what-is-cities-and-memory-about/

has over 25,000 cases of the virus at the moment and that number will rise. My message to the global community... stay safe and stay home. [198]

These forming, living archives will provide the future with an ability to feel our Now. I considered what I could contribute that would address as well what I am considering here. A difference with my artwork at this time, aside from its fragmented form and nature, was that I was creating it with my personal archives, having found myself diving deeply into them weeks into the event. Small works, notes, moments: my daughter at three, dappled light on her face through the window as she lay on the floor looking at the camera's screen turned towards her, a beautiful image that now makes me think of infection and contagion. A voice recording recalling a dream I had when pregnant and trying to come to terms with my ecological guilt of bringing another consuming life form into an overpopulated, over-consuming world; a dream where I hatch a baby dragon that I knew was dangerous and also a sign of climate change, but loved and cared for, nonetheless. The super moon captured a sleepless night with an unnerving podcast from celebrated epidemiologist in the quiet background, my hand shaking. Footage from the Apollo Moon mission from NASA's archives…also having me think of contagion. The song I created mourning my grandmother's death, from an archive of extinct and endangered Hawaiian birds and forest soundscape. Together, somehow, transmitted my internal state. As I wrote in Chapter 1, "Artists and sound designers working with and considering sound from the past can create sonic compositions and databases that could help us to remember and think about our heritage, to feel our heritage. A fluid museum and living archive to give voice to the past in the present, while creating new experience and highlighting information within the complexity of our changing soundscapes, over a period that usually defies our comprehension."

I created a call on *Sonic Field* for a series titled, *Sonic, Social, Distance*, and its subseries, titled *Soundtracks for Strange Days*. "This is a time-capsule archive of finished works, and of fragments, reflecting a fragmented time. Fragments that feel frozen or appropriate as they are and would then be placed with other fragments to

[198] Ibid. At the time of my writing this in 2020, New York City has over 190,000 confirmed cases, with around 16,000 deaths. The world has over 4.5 million, with over 307,000 deaths. Update: at the time of submitting this thesis a year later in 2021, the world has over 207 million cases, with over 4.35 million deaths.

create an unanticipated whole. *Sonic, Social, Distance*, is calling for works on listening and sound, and thinking about listening and sound, in the time of social distance…alone together, together apart. This call is on-going, until it no longer makes sense." [199] I am listening and thinking about listening in the time of social distance and frames–windows and screens. I look at framed pictures on my walls, what a luxury to have things hanging on walls. What a luxury to have borders and frames, giving us the impression of divide and containment, of form. We have relied on these divisions and compartments for too long, we perceive the world through them. It's a skewed perception, warped to serve, and made to feel easy. We lose much in not accepting the complexity, the "formless in-between nature."[200]

Soundtracks for Strange Days is publishing audio-visual works with this form:

1. A static moving-image shot out a window or door that includes its frame
2. The recorded sound out that window or door at that moment
3. The sound outside and behind the frame, what we cannot see…this has no rules, find a way sonically to express your interior: design, layer, process, use canned sound, use archival sounds, use the actual chaos that may be happening at that time, or another time[201]

The sense of isolation caused by Covid-19 gives a new meaning to the *Wayback Sound Machine*: Time present of things past; time present of things present; time present of things future–coexisting and blurred, and currently condensed. What is past can be presented; we can prepare for that presentation, curate and prepare its representation. We can consider with our recorded material of this moment our sensations, and work to give that to the future home of that archive.

To revisit the conclusion of the thesis Introduction: If the study of acoustics is about sound in relation to *space* (the perception of, the affect of, Information Bearing

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[199] Colbert, Maile. 2020. "CALL FOR WORKS: Sonic, Social, Distance and Soundtracks for Strange Days." *Sonic Field.* See call and contributions in the Annex, p. x, the series contributions are also accessible on my editor page: https://sonicfield.org/author/mailecolbert/

[200] Ibid. Quote from Voegelin in, Pisano, Leandro. 2020. "The Political Possibility of Sound, Interview With Salomé Voegelin," *Digitcult*. Retrieved June 17, 2020: http://digicult.it/articles/the-political-possibility-of-sound-interview-with-salome-voegelin/

[201] Ibid.

Elements, Acoustic Niche Theory, use of these in sound composition and design), and the study of sound ethnographies and ecologies is in relation to *place* (Soundscape Ecology, Biophony, Aurality), and the study of sound in affect and phenomenology adds *time* (Listening, Deep Listening, Radical Listening, Sonic Rupture) a soundscape ecophilosophy in relation to sound design can interconnect this rhizome, articulating affect and counter-aurality through artistic output and contribution.

> Sound is not "this" or "that", the chair or the table, the political or the philosophical, the cultural or the social. Instead, it is what we hear between these things and institutions, where they meet in their interaction as formless forms. The imagination of things in their correlate formlessness can help us discuss not just what they are, inevitably evoking norms and habits, but what they do together, at an always contingent intersection, where as indivisible concepts they overlap and are dependent on each other in a present tense. And so it is exactly sound's materiality as the ephemeral materiality of the in-between – that is not you or me, but what we sound together (…) I understand sound, exactly because of its formless in-between nature, (…) to make an important contribution to how we can think about the world and ourselves in this world…[202]

I have tried to maintain what I think a valuable honesty to the complications and blur of sound, as a form, and as a field. Its definitions and descriptions changing constantly, like most forms on our Earth. Frames and borders can be useful in communication and problems, but they come with their own set of problems–frames and borders are artificial, and they block and divide. As Jordan Lacey describes in his text on the Urban and Nature divide, "My body is located upon a division. On one side I touch the urban, and on the other, nature. But as I look groundward I see no division. Rather, a continuum of the Earth."[203] Sound crosses divisions, frames and borders; surely one of the reasons the study and field has been an elusive one. Confinement is not in its nature. This it has in common with a virus, I can't help but

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[202] Pisano, Leandro. 2020. "The Political Possibility of Sound, Interview with Salomé Voegelin," *Digitcult*. Retrieved May 16, 2020: http://digicult.it/articles/the-political-possibility-of-sound-interview-with-salome-voegelin/

[203] Ibid.

think this right now. And within thinking that, I also consider how the dualistic definitions we have had for living or not living have limited us greatly in our study of viruses. Would we be further along if we were able to accept the complication and blur of a life form that shared this planet with us, but didn't fit our categories exactly? Would we be further along if we could accept and learn from that in-between nature?

CHAPTER VI: Conclusions:

This thesis explored various forms of sound from the past, and sound for the past, showing that consideration towards the relationship between listening to our soundscapes (how we listen, what we listen for or to, what or who is silent or silenced) and artistic sound designs can transmit much information about ourselves and others in time, space, and place. I was inspired to investigate the *Wayback Sound Machine* as an art research project and thesis years after it began in an art practice, when I discovered and began to gather other research based on sounding the past, in various forms and disciplines. As I continued to work, I considered the benefit and contribution that one inclusive and interdisciplinary volume of these works could hold, along with projects of my own and sound I designed for other filmmakers–this is what became the *Wayback Sound Machine* PhD project and thesis, primarily written about in Chapter 2, 3, and 4. I introduced these projects and how they are a part of the *Wayback Sound Machine* with an initial investigation of various theories of

perception and audition of sound, in time and place, and proposed an interdisciplinary connective aurality between that and the relationship of soundscape and sound design. I argued this aurality is key to active listening that can transfer information, as well as critical creative sound designs that can work as counter-auralities to challenge and rupture problematic historic narratives–especially in our archives–and give towards and guide our possible futures with complex information made sensible. Counter-auralities that can give voice or a platform for a voice that was rendered a silence in the past, or highlight a voice now that may go silent in the future–a way of actively reconfiguring and rupturing how our audience may expect to listen, to call attention to what they are listening to, what they are listening for, what voice is missing–to help us listen differently. As I stated in the introduction, listening to our sonic surroundings, or sonic surroundings designed for an artwork or cinema, is a source of knowledge and of complex, sensory information.

During this thesis I have defined the *Wayback Sound Machine* as a tool that:

- Researches and gathers various forms of sound from the past
- Researches and gathers various forms of designing sound for the past
- Considers the knowledge and applications that comes from this, placing these considerations together with the sound works and research
- Asks critical questions about sonic representation and presentation
- Researches and gathers information and knowledge about listening from the relationship between soundscapes and sound design
- Applies towards creative sound design works that consider a critical aurality
- Approaches the archive artistically and as a hyperobject to be activated creatively with acts of counter-aurality, with a focus on accessibility and discoverability
- Ruptures the moving image archives using creative sound design to make the past sensible to the present; ruptures the sound archives using creative moving images to do the same

The *Wayback Sound Machine* is a gathering, a constellation, a rhizomatic concept, theory, and virtual tool towards creation, investigation, and use of sound

from the past. *The Wayback Sound Machine* looks to media archives as possible hyperobjects, in constant growth and change, activation and challenge, a place for artists and art to work, a generative process in use, not fixed and frozen to one time, place, or narrative. Our past grows with our archives, and our archives grow with our past. The *Wayback Sound Machine* isn't about traveling to a past, but experiencing a past in, and with, our present–making it present. It concerns itself with and problematizes what we define and decide are histories, challenging them and disrupting drawn historic lines, asking what can listening to our past reveal about our now and possible futures, showing us the benefit of how experiencing something from the past with creative sound work rendering it embodied and present, allows for a new embodied knowledge and understanding of that something past. It sometimes reveals and challenges who created those lines in history, it sometimes considers and challenges how and why those lines were created. The *Wayback Sound Machine*'s questions, concepts, and methods, help guide and uncover, and express what is uncovered. A place for sonic agency to work towards giving voice to voices taken away, and a place for voices–human and non-human sound expressions–to be listened to again.

I will illustrate with a last return to the origin of the *Wayback Sound Machine*, as described in Chapter 2, including in the description all the definition I provided in the list above. Years ago, while working on a project in Cornwall, U.K., I walked an ancient pilgrim path called the St. Michael's Way, an arm of the Santiago Pilgrim Route. I walked the 12.5 miles, adding more miles here and there while getting lost, from Penzance to St. Ives. The way towards Santiago de Compostela is from St. Ives to Penzance, the direction the pilgrims would have taken whether on their starting journey or having moored their ships from Ireland and Wales to avoid the hazardous waters around the peninsula. In Penzance they would have taken a boat to Northern Spain, attempting to avoid the famous pirates of the time. In this sense, I was walking backwards, which was something that I remember occurred to me as I was approaching the middle of the route, which was also the peak, right before I began to think about sounding the past.

It was always my intension to return to the site, research and record, and create for the art gallery I was working with at the time, The Exchange & Newlyn Art

Gallery, this soundwalk back though time. When Covid-19 hit, it became impossible to make this project on-site. But I had always intended to answer creatively the very first questions called up from that walk:

> I began to wonder what this path may have sounded like back in the time of its famed thieves and pirates, and back when its soundscape was composed of shared occasions celebrated with the voices of people, priests, prayers, and populated markets and fairs along the way. (...) I wondered how it might have sounded even before then, before the hills were blanketed with crops and cattle, before the many battles that must have been waged; villages built and grazed.[204] (Colbert, 2014a)

We can create this, the thieves and pirates, the ceremonies and celebrations, the crops and cattle, the battles and settlements. Research, and compose, represent and present. Under non-pandemic confinements and circumstances, we can record during production for the project, and those recordings can live somewhere for the future, along with the project itself. We can research recordings in archives for it, and perhaps they can also join this new archive, together in the project's context, and welcome future creative contexts. I wrote:

> Time present of things past; time present of things present; time present of things future…coexisting and blurred, and currently condensed. What is past can be presented; we can prepare for that presentation, curate and prepare its representation. We can consider with our recorded material of this moment our sensations, and work to give that to the future home of that archive.[205]

I asked if there more birds then. Certainly, and I can find the data through research, and find as many recordings as possible, for now online. For example, I discovered the Cornish Chough (red bill Chough), in serious decline due to habitat change, extinct in the wild since 1973. I find a recording of its call in the British Birdsong archive.[206] I read that, interestingly, they flourished during the industrial

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[204] Also referred to earlier in this thesis, chap. 2.II.a; p.67.
[205] Also referred to earlier in this thesis, chap. V; p. 176.
[206] One recording found here, but it was available in many places. Multiple recordings will be important, as the soundwalk soundtrack should have growing voices as it goes back through

age, when mines were the main human activity in the area. The mining activity would be sounded as well. Were there more trees? The answer to this depends on the time; as now, with the decline of mining activity Cornwall actually has more growth than during the industrial era.[207] Were there more boar and fox? This question led me to the Cornwall Mammal Group, a conservation and recording organization whom I would contact for information about the history and projected future of mammals in the site, along with a request for recording access. What about even before these hills were hills, could there be a way to sonify these hills forming? What seemed then the more daunting question, I know now would be in many ways the simplest, looking into the well-researched and accessible data of the geological history of the area, then finding an affective and creative way to sound that. With Cornwall's history of mining, there is extensive information about its geology available. There is even a well-informed Wikipedia page on the subject.[208] It tells me the Cornish peninsula was formed primarily during the Variscan orogeny, a geologic mountain-building event caused by the Paleozoic continental collision that formed the supercontinent of Pangaea, some 290 million years ago, and taking place over about 100 million years. Perhaps this is where my soundwalk timeline starts–or when going back in time, ends. I can organize my research and composition considering the Acoustic Niche Hypothesis: the anthropophony (environmental sounds that are created by human beings), the biophony (the acoustic environment often thought of as "natural" and including animal sound), and geophony (non-animal sounds such as weather and water). (Krause. 2008)

The route dates back to pre-historic time, 10000BC to 410 AD, and was used by the earliest missionaries in England. While so many centuries of feet trodded the path into a trench, it had been forgotten until 1987, when it became a European Culture Symbol. Opening officially in 2004, the path was worked on and researched

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time, the past having a larger population in its soundscape. https://www.british-birdsongs.uk/red-billed-chough/

[207] The relationship between the Chough population and industrial age were found on this conservation organization's site, who have been attempting to re-introduce the Cornwall Chough population in the wild of Cornwall since they went extinct there in 1973. https://chough.org/the-red-billed-chough/decline-of-the-cornish-chough

[208] The Wikipedia page: https://en.wikipedia.org/wiki/Geology_of_Cornwall#:~:text=The%20geology%20of%20Cornwall%2C%20England,the%20rest%20of%20the%20county.

by the Cornwall County Council, *Bredereth Sen Jago* (Cornish Pilgrims of St. James), and the Cornish Bureau for European Relations.[209] All three of these groups I would have contacted for access and advice on the history of the path and its surroundings. The path itself is covered by the OS Explored sheet 102 and Landranger sheet 203, these maps are from the Ordnance Survey, the national mapping agency for Great Britain, and are extremely detailed, down to old footpaths.

Points on the path I would research, in order from St- Ives to Penzance:

- St. Uny church in Lelant, near the medieval harbor where at that time the boats from Wales and Ireland would have anchored. This could be sounded, researching the type of boats and materials they were made of at that time, and surrounding time leading up. The histories of the harbor, for example, it was thought to have been buried in sand and salvaged twice in the 13th and 17th centuries. I could go back further, as it is told the church may date back to the 6th century, St. Uny is said to have found a small chapel on its site. Information like this and: "The surviving church retains a Norman arch, although the present material, a red granite, dates back only to the 15th century," found on cultural sites I can already work with from afar. [210]
- Knill's Steeple, a 50-foot obelisk monument on high ground.
- Bowl Rock, a massive granite piece legend says was placed by giants, providing me an opportunity for going back to a fictional event with the sound, perhaps relating this to the sound of the hills forming. The ways legends mix with oral histories can allow another kind of knowledge to be considered about people, and for this project information like this would absolutely be a part of the design, leading to perhaps an aural Magical Realism.
- Trencrom Hill, thought to have been a Neolithic hill fort of 16 hut circles and a rampart. The Neolithic humans had fixed settlements and began agricultural practice, changing the soundscapes drastically. I can

[209] An overview of history and information on the path from these groups can be found on the Cornwall Guide website: https://www.cornwalls.co.uk/walking/st_michaels_way.htm#:~:text=St%20Michael's%20Way%20is%20a,a%20designated%20European%20Cultural%20Route.

[210] Ibid.

find more information on these settlements from the Cornwall Heritage Trust, which also informs me that human history there started with a reoccupation of Britain after the last Ice Age.[211] This informs a massive part of my composition, as I now know when human sounds would come in and change the soundscape. There is information on languages and ceremonies. Axe heads dating back to 3500 BC have been found on the site, and the stones scattered around also hold a giant legend, the Giant of Trencrom and his cousin on St Michael's Mount would throw boulders at each other.

- Ninnes Bridge.
- Ludgvan, the (at least) 7th century church was a meeting place before the final section of the path. After which the path splits to a choice of the marshes of Marazion, where I recorded the bird sanctuary, or Gulval, where I recorded two villagers conversing in Cornish in the village from the 6th century church yard (though the granite bricks date to 1440), while the bell tolled.

My body is also an archive of memory, and I am working to activate this as I write–to remember that path by looking at my photos of it, listening to recordings of the area, walking slowly in my studio with my eyes closed trying to call up, step by step: how it looked, smelt, sounded, felt. Wanting to make the past sensible to the present, I consider how at times it already is, perhaps more than we notice. I want to create this soundwalk, and yet the urge comes not so much from the desire to make something new, as to share an experience that was presented to me, one already in the soundscape. Now I want to, in a sense, recreate that experience to transfer to others, to allow them to be affected as I was in that moment, to experience that information with the information I design, together, (re)presented. "I started to dream of a wayback machine for sound." I remember the acoustemology of the experience of listening on that path, how the soundscape held sensuous pieces of information in its place that seemed to get pulled to me by the wind on the top of the hill. I would want the soundscape of this creation to re-create that affect, and would approach it the way I created the wombscape, giving that sense of aural perspective, including the

[211] For example, and again working from afar, on their site there is a page dedicated the Neolithic Cornwall: https://www.cornwallheritagetrust.org/timeline/neolithic-cornwall/

hauntological elements on the wind. On either side of the hill the path crawled down the peninsula to the ocean, crossing villages and farmland and old cemetery churchyards. Visually, there was already a lot to pull the mind back some centuries. The path itself was worn from so many years of walking, a channel below the land surrounding it. The wind would come from one side, the wind would come from the other side, and in a very different way the wind would rush at me from forward, and at me from behind. On this wind were those asynchronistic, and at times even acousmatic, sounds–haunting and lending the imagination to wander even further. Bells from centuries ago would toll in the present with electronic bells of a closer time, together but for my subjective perception, mixing with a narrative forming, the sonic information allowing me to identify one as very old, and one as much newer, allowing me to experience two different times sounded, or one timeline, right now– the sonic parts create a whole that includes time and subjectivity, my designed sound will do the same.

In the first chapter of *Village Bells, Sound and Meaning in the 19th Century French Countryside*,[212] historian Alain Corbin describes in the *Networks of Sounds* section the many components that should be considered when considering sound from the past, in his case the many uses of bells. He writes of the difficulty to attempt to consider the subjective perspective of the listener of bells, the nostalgia of the bells already in the quickly changing soundscape of Industrial Revolution France, the codes and signals of different rings, and how often they were rung, and how this was listened to, and by whom. (1998, pp. 4-8) As a historian, he is working to be rigorous, but as well notes the importance of imagination to this. The soundwalk I imagined, and imagine now, is not rigorous in this way. I am an artist, not a historian. But I am considering the subjective perspective, which is anchored to the person in the path, listening, as the embodied point of audition (POA). (Chion, 1994. p. 90) [213]

[212] Corbin, A. (1998) *Village Bells, Sound and Meaning in the 19th Century French Countryside* (Thom, M., trans.). New York, NY: Columbia University Press. pp. 4-

[213] Further Reading and analysis towards this would include:

Bijsterveld, K. (ed.) (2013) *Soundscapes of the Urban Past: Staged Sound as Mediated Cultural Heritage*. Berlin: {transcript}

Eneix, L. (ed.) (2014) *Archaeoacoustics, The Archaeology of Sound. Publication of the 2014 Conference in Malta*. Myakka City, Florida: OTS Foundation. pp. 51-58, pp. 87-98, pp.99-106, pp. 107-116, pp. 185-194

Considering again O'Callaghan's description of how one can track a sound object temporally, following it through its path and consider how characteristics of the environment shape it, with the *Wayback Sound Machine* we can extend those times, and track to the POA of the future listener on the path, (2008a) a sonic sensibility of crystal-sound, merging the actual and the virtual, the present and the pasts. (Deleuze, 81; Voegelin, XVI)

The path itself is not as vast as the *Passageira em Casa* work, and not as abstracted as *Come Kingdom Come*. The original idea was simpler in its geography, the place itself mostly stood still, other than the POV and POA of the walker–it was only time that moved and sounded around them. Some fiction would come in, myths and legends, but at the time I hadn't imagined a specific narrative, such as I did with *Radio Terramoto*. This experience was more interiorly provoked, though not as deeply as *Soundwalk-walk*. The history of the path would be researched, as well as the natural and human history of the time, and the outcome would be simple in form: an audio file from a soundmap, likely Radio Aporee, to play while you walk, and while you walk you would listen to the soundscape spinning back through time. I can build this aural past to consider its future. We could hear in its created soundscape future *Silent Springs*; (Carson, 1962) soundscape made more homogenous due to increased human construction and traffic–remembering the *Wayback Sound Machine* comes to us also from a place of projected loss. Perhaps this will be the noise of our future giants.

The preceding section shows how *Wayback Sound Machine* can be used as a conceptual, virtual, and affective tool for sonic practice, method, creation, process, design, analysis, critical thinking, critique, theory, philosophy, and creative critical writing. The *Wayback Sound Machine* art studies thesis is a constellation and a continuum of listening and creating, of uncontrolled soundscapes in ecology and

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Smith, M. (ed.) (2004) Part II, Sounds European, *Hearing History, A Reader.* Athens: University of Georgia Press.

controlled soundscapes in cinema, soundscapes in art and soundscapes in archives, soundscapes in place and soundscapes in time–exploring, gathering, and producing creative acts of critical engagement with listening and sonic recording, compilation, preservation, and (re)presentation through sound design. The *Wayback Sound Machine* considered theorized origins of a sense of composition and that relationship to sensible signals in our soundscapes, and applied it creatively towards sound design, revealing information about listening, how we listen, what we listen to, and what we listen for. Primarily, the attention and activation of the *Wayback Sound Machine*'s questions, concepts, and methods create affective sonic ecologies in creative sound design, and affective sonic ruptures in our sound archives. Through research, examples, and my own practice-based case studies and publications, this thesis contributes new ways of thinking about art and cinema, archives and archive studies, ethnographic and ecological studies, and the intersection of these fields and disciplines under the transdisciplinary umbrella of sound studies.

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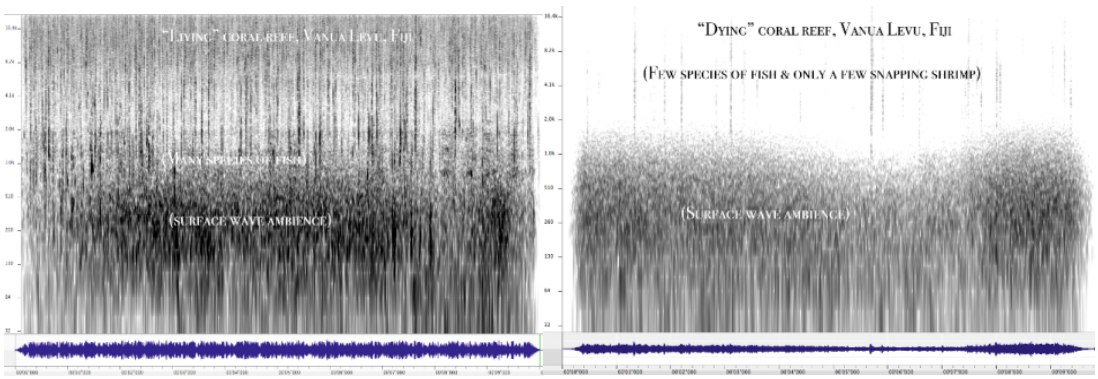

Courtesy of Bernie Krause from The Great Animal Orchestra (72-73)

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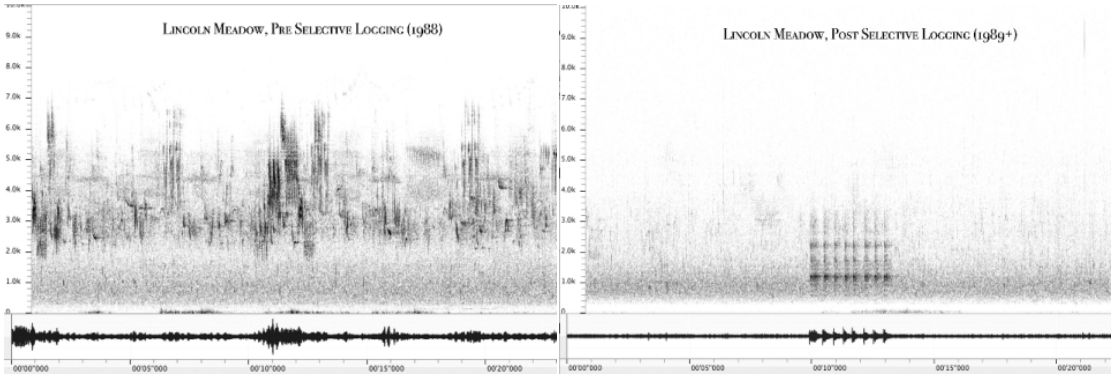

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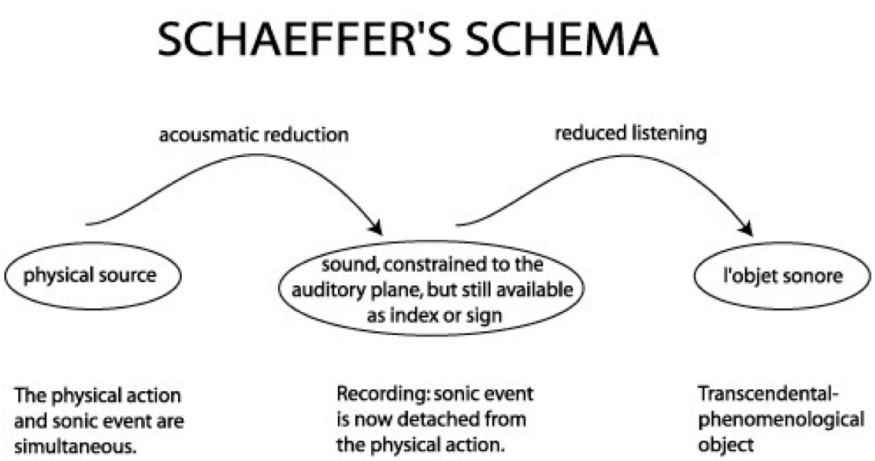

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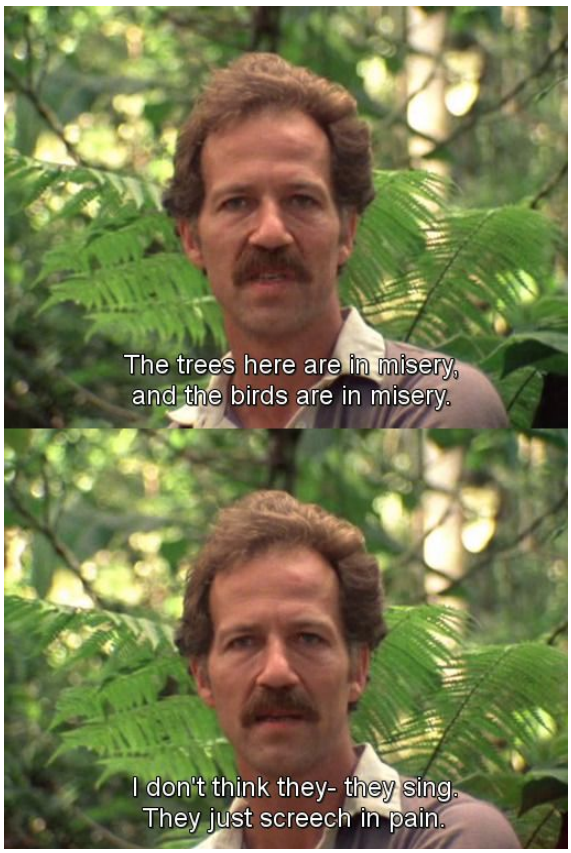

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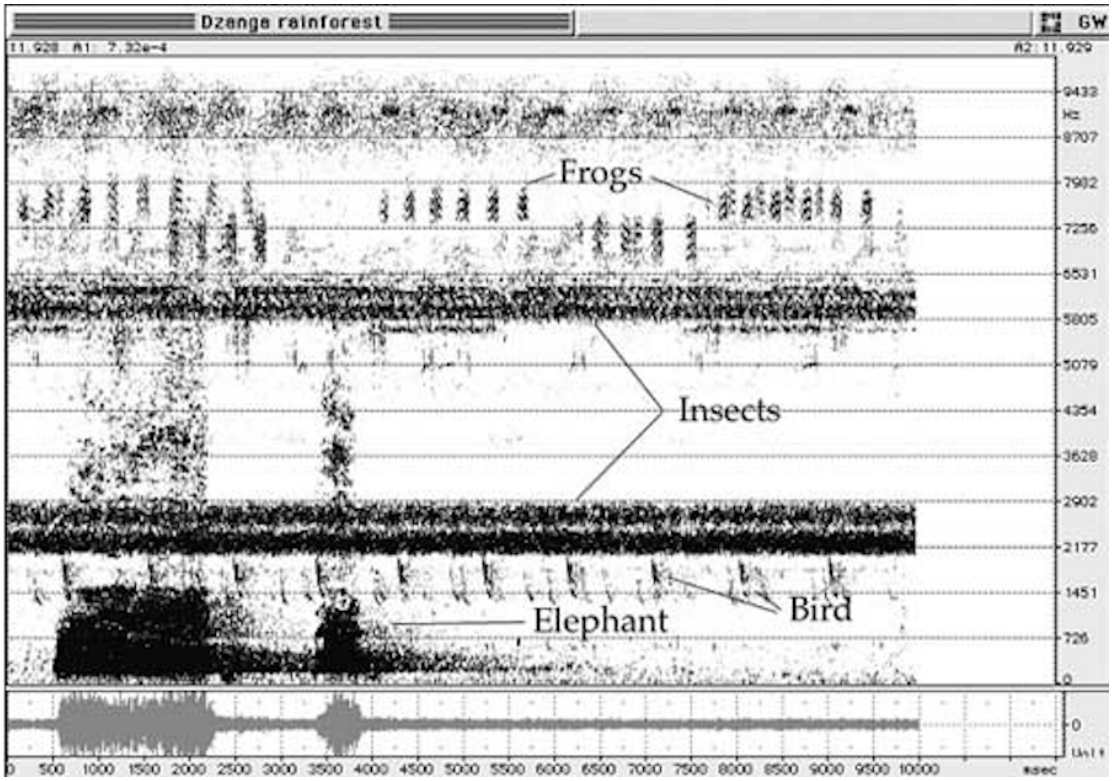

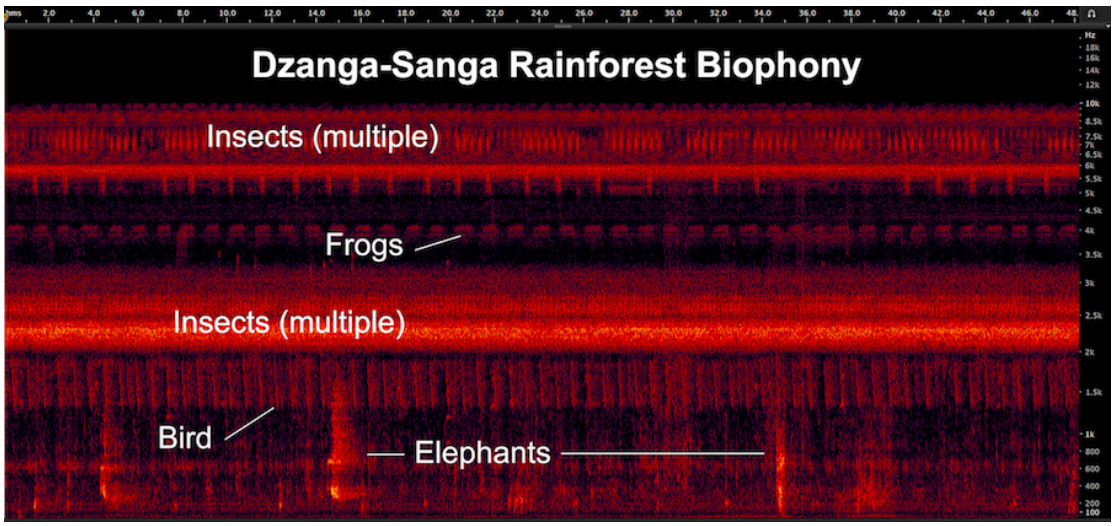

First image: Krause, Bernie. 2004. "The Meaning of Wild Soundscapes" in *Greenmuseum*. He writes: "This spectrogram represents a 10 second sample of sound moving from left to right across the image. From bottom to top represents frequency from 0 to 10,000Hz, about an octave higher than the highest note on the piano. Anywhere where there is no energy (white space) is where the Bayaka (and others) fill the space with their music." Accessed February 3, 2017, from http://greenmuseum.org/generic_content.php?ct_id=181

Second image: More recent spectrogram derived from a different segment of the same Dzanga-Sanga recording. Time, about 50 seconds, is measured on the x (horizontal) axis from left to right. And frequency, from 0Hz to 20kHz, is measured on the y (vertical) axis from bottom to top. The niche discrimination in this representation is clearer. (Images and information used with permission from Bernie and Kat Krause, Wild Sanctuary).

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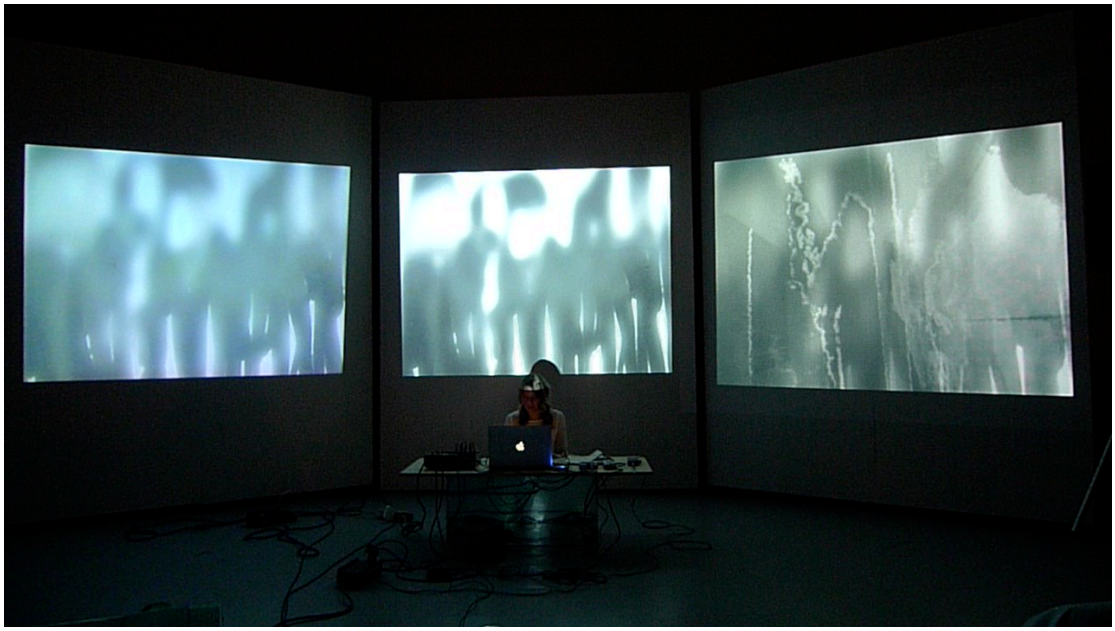

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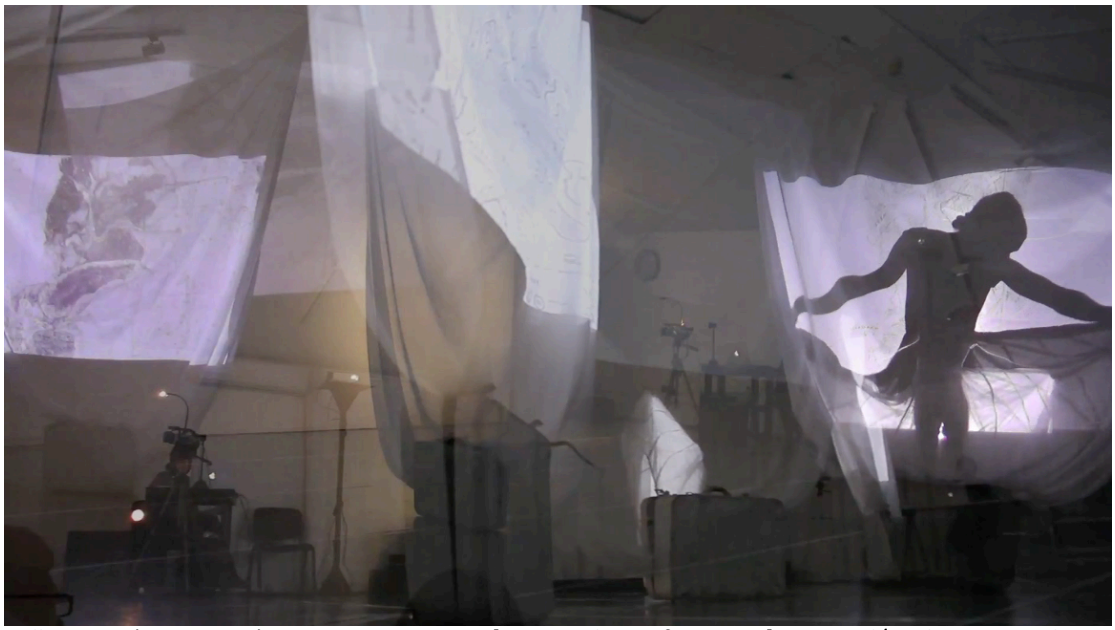

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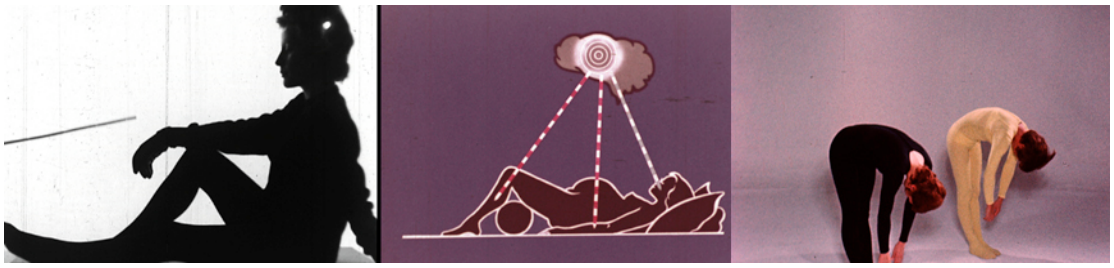

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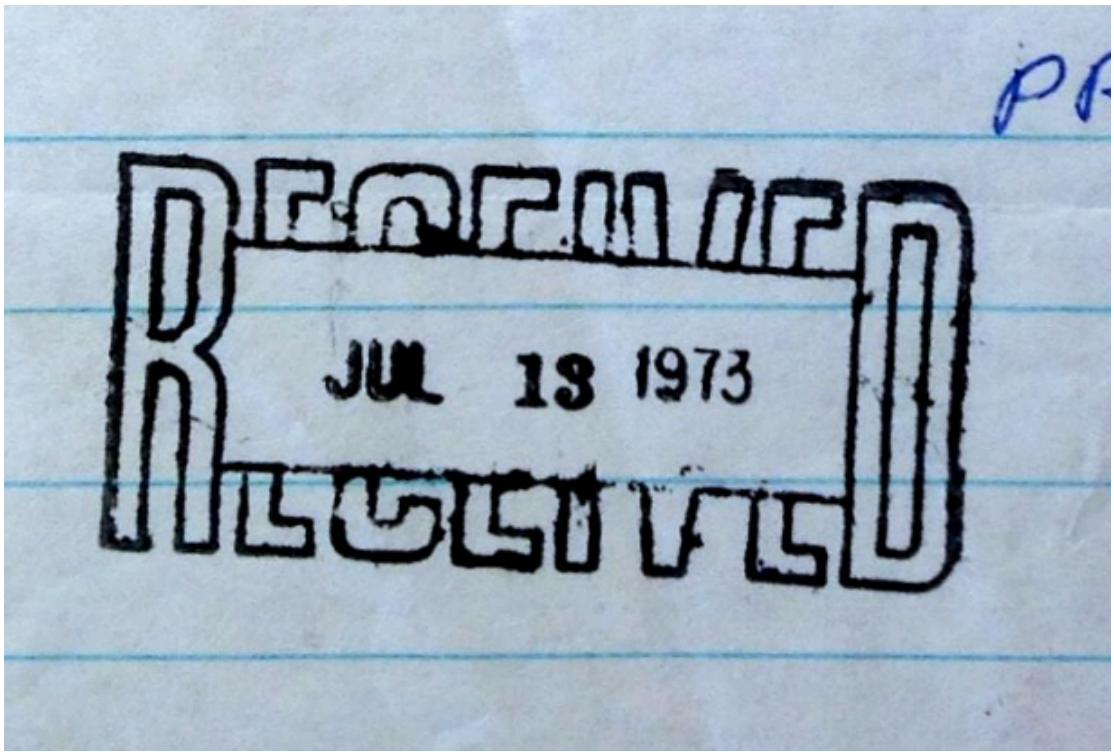

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Still frame from: Stephens, C. & Velez, P. (Directors) Verlez, P. (Producer) (2020) *The American Sector*.
[Motion Picture] US

ANNEX

Soundwalk-walk (the score)

I. (Slow) Walking Meditation *–tuning the body*

Begin to walk as slow as possible. Take the time to deconstruct and decompose the movement. Observe the contact of the soles of your feet with the ground, while your head is lightly balanced on the top of your neck. Feel the opposition of the weight of your body sliding through your feet into the core of the earth. An imaginary transparent string pulls from the top of your head, up to the clouds. You may notice you are already forming a path. Keep on that path 10 to 15 steps, and when you´ve reached the end, turn around and trace back the way you came.

Ask yourself these questions while walking:

1. How am I walking?

2. What is happening in/to my body as I walk?

Now…

> raise your foot off the ground and observe the foot still in contact

> observe the change of weight in the body as the feet move forward.

> observe the transition of the weight from the heels to the toes

> experiment with different speeds of walking and observe what changes

Repeat the process while walking backwards slowly.

Focus your attention inwards towards sensations in your body, and how they relate to your walking, such as breath moving inwards then outwards. Give special attention to the sounds that the body makes when walking–clothing friction, shoes touching the ground, heart beating, blood moving, breath, organs, bones. Notice how deeply you can go inside and listen, as if there

were ears in keep points all over your body. Notice how those bodily ears listen, and how that is connected with the bodily movement.

II. Walking Meditation with **"Native" *–tuning the ears to the body, listening through the bodily ears (introduction of kinesthetic listening)*

Walk so silently that the bottoms of your feet become ears.

III. **"Environmental Dialogue" *–tuning the ears*

Each person finds a place to be, either near to or distant from the others, either indoors- or out-of-doors. Begin the meditation by observing your own breathing. As you become aware of sounds from the environment, gradually begin to reinforce the pitch of the sound source. Reinforce either vocally, mentally or with an instrument. If you lose touch with the source, wait quietly for another. Reinforce means to strengthen or sustain. If the pitch of the sound source is out of your range, then reinforce it mentally.

IV. Walking Meditation with **"Environmental Dialogue"

V. Walking Meditation with **variation of "Environmental Dialogue" - "Environmental Dialogue Back in Time"

As the sound-walkers continue to follow and listen to their path, initially silent again, they begin to walk their path backwards, and as they do so, imagine traveling back in time…what would the soundscape around them sound like in different times of the past. Once they reach the time of the past of their choosing, they should stop and once again perform "Environmental Dialogue", this time with the soundscape of the past in their mind, but vocalizing openly. After a while, they can move forward again, "updating" the soundscape, as well as the sound they are reinforcing. This should be continued until everyone is vocalizing the present again. Variations can happen.

Original Schema

Key Question: ***What can we gather from sounding the past, and within that, what is the relationship between soundscape and sound design?***

Listening to the past → a critical aurality

(Sturken, Mirzoeff, Bull&Back, Smith, Feld, Abrams, Ernst)

What can giving voice to history and heritage tell us about the past in the present, and what could that mean for our future?

-visual culture and aural culture

-towards a critical aurality

Composing the past → a critical sound design, a critical ear

(Heuson, Suga, Deleuze, Guattari, Bijsterveld, Chatwin, *Musique et écologies du son*)

What is the artist's role in the archive and with sounding the past, and how can that strengthen a critical practice? How can these questions lead to a critical aurality, and a critical sound design?

-a critical ear and a critical sound design

-an ecophilosophy of sound and soundscape

→ soundscape

(Schafer, Truax, Krause, Carson, Jameson)

-acoustic ecology and soundscape ecology

-bioacoustics and biomusicology

-sound ecologies

-sound and anthropology

→ soundscape →listening

(Oliveros, Barthes, Cage, Blesser & Salter, Toop, Horowitz, Feld, Abram)

-listening and Deep Listening

-Acoustic Niche Hypothesis

→ soundscape →listening → composing and compiling

(Krause, Augoyard, Voegelin, Schaeffer, LaBelle, Minevich, Sterne, Westerkamp, Cusack, Truax, Chion, Schaeffer, Kane)

-field recording and phonography

-archive forming towards archive using

-sound art and *musique concrète*

-acousmatic and disembodied sound

-sonification

→ soundscape → listening → composing and compiling → sound design

(Chion, Deleuze, Guattari, Suga, Murch, Matthen, Merleau-Ponty, Ihde, Nancy, Altman, Bresson, Rancière, Pudovkin)

-phenomenology and affect

-Acoustic Niche Hypothesis and information-bearing elements

-acousmatic and disembodied sound

-sonification

→ soundscape → listening → composing and compiling → sound design → past

(Derrida, Eneix, Hendy, Steedman, Sterne, Cobin, Ernst)

What is the archive's role in sounding the past, and whom does this give voice to?

-archives and artists using archives

-sound design and time-based media

-soundwalks and soundmaps

-sound museums and sound in museums

-archeoacoustics and sonifications

-reenactments and me

Wayback Sound Machine

Sound Survey

Name:

Project:

Dear _____,

I am hoping you have the availability and time to answer a few questions for a survey related to my thesis project, *Wayback Sound Machine, Sound through time, space, and place*. As you may know, working with you on _____, I was often consulting and considering the thesis concept, questions, and methodologies. Having written about this work in a chapter (of which I will be very happy to share), I was hoping to have a chance to hear your direct thoughts.

If you have the time and space for it, I'm hoping you could answer, in regard to _____, the following questions. These questions were strategically open to interpretation, to encourage diversity in answers. If you can please answer to the best of your ability and note your interpretation of the question if you aren't sure. If you need to skip a question, just write "skip". I am pasting the survey below, but I will as well attach a Word Doc, which you can answer directly on, or if there is another format you would prefer, just let me know:

a. Key Question: *What can we gather from sounding the past, and within that, what is the relationship between soundscape and sound design?*

Q: What possible purposes come to your mind when considering sounding the past? In what ways are sounding the past/using sound from the past important to this work?

Q: Do you think there is a relationship(s) between listening to our soundscapes and sound design? Can you describe those possible relationships?

b. *What can giving voice to history and heritage tell us about the past in the present, and what could that mean for our future?*

Q: Do you think that sound design/art can give voice to history and/or heritage?

Q: Do you think giving a voice to history and/or heritage could give information towards our future? What can sounding the past/using sound from the past say in our present about our future (for example with issues such as climate change, overpopulation, immigration, etc.)?

c. ***What is the artist's role in the archive and with sounding the past, and how can that strengthen a critical practice? How can these questions lead to a critical aurality, and a critical sound design?***

Q: Do you think it's ok to take "artistic license" with archival documents, for example using a sound or sounds with moving image archival footage that is not its original soundtrack? Or taking a "historic" sound recording and using it out of context in an artistic work?

For film projects, other projects can skip:

Q: Do you think there is an ethical responsibility for moving image archival footage taken out of its original context to "sound correct" or "sound possible"? In your opinion, is a rigor to "expected sound" important when designing sound from the past? Or is an expressive acousmatic sound design more appropriate? Which do you feel is more ethical and why?

Q: Do you think that sound design can be/should be read as critically as its visual counterpart?

Q: Can you give an example from your film where the sound(s) give a critical impact? In consideration to the concept of sounding the past/using sound from the past, can you give an example of what you consider the most successful and/or least successful element or approach to sonic design for your film? Please describe.

d. ***What is the archive's role in sounding the past, and whom does this give voice to?***

Q: What role(s) do you think sound archives can and/or should play in cinema?

Q: What role(s) do you think designing sound for moving image archives can play in cinema?

Q: Are these guidelines or is each project different? What might make them different in this way? For example, in a documentary, does the sound the audience hears need to make sense with visual cues?

Q: Do you think audiences are culturally more prepared for abstract and expressive visuals over sounds?

Q: In what ways do you think sound design can give cinema a sense of place? Is there a section(s) in the film you feel this happens?

...I very much appreciate your considering this, and if you don't have the time or energy for it, please just let me know. If you would like to contribute, your answers will be published in my doctoral thesis with full citation to yourselves, and your film. I can also contribute any further information, such as a website, in the footnotes. This will be publicly published. If you do wish to contribute, if you could please send me your answers by August 10th at the latest (if possible, before would be also very much appreciated).

Thank you, and please let me know if you have any questions.

Sincerely,

Maile Costa Colbert

Sonic Field call:

CALL FOR WORKS: Sonic, Social, Distance and Soundtracks for Strange Days

Maile Colbert·May 14, 2020

HMV's sound-isolating vinyl listening booths from the 1950s

In an interview with Digicult, Salomé Voegelin describes, "I understand sound, exactly because of its formless in-between nature".[1] As more than a third of the planet's human population has gone into some sort of social restriction…self-isolation, social isolation,

x

physical distancing, quarantine…since those who have the luxury of walls have gone behind them–time has not so much stood still, but fragmented and blurred. Our schedule markers have gone virtual, or gone away, or are far away. Time shifts, feels like a pause, gets interrupted by children home, or emergency texts going off, our Zooms and Skypes ringing, hourly checks of creeping data maps where loved ones live. The luxurious and real stress of shifting online, a vast chunk of the world becomes framed. That other chunk of the world, out our windows, also framed. Behind our walls, safe and surreal, sound connecting all. As artists of various media attempt to capture some essence of this time, it may be found that fragments, notes, moments, and blurs, are what express better our experience.

When Covid-19 hit, I began to write again in pencil. I felt anxious until I could accept a fragmented interior with a hundred variations and versions, everything in process…process over progress. Text, audio, visual-both moving and still, compilations, complications, towards combobulations, if that is what comes. This is a time-capsule archive of finished works, and of fragments, reflecting a fragmented time. Fragments that feel frozen or appropriate as they are and would then be placed with other fragments to create an unanticipated whole.

Sonic, Social, Distance, is calling for works on listening and sound, and thinking about listening and sound, in the time of social distance…alone together, together apart. We are calling for full texts, as well as text with media, or fragments and notes that will be curated and compiled together. This call is on-going, until it no longer makes sense.

Subseries call: ***Soundtracks for Strange Days***

I look at framed pictures on my walls, what a luxury to have things hanging on walls, to have walls. What a luxury to have borders and frames, giving us the impression of divide and containment, of safety, of form. We have relied on these divisions and compartments for a long time. We perceive the world through them. It's a skewed perception, warped to serve, made to feel easy. We lose some in not accepting the complexity, the "formless in-between nature". I am listening and thinking about listening in the time of social distance and frames – windows and screens.

With the call for self-isolation observed came a quieting and change in many soundscapes. Less traffic, on roads and in air, bars, restaurants, cafés closed, for a little while even construction ceased. Many took photos of the sky outside their windows, brighter and sharper each week passing. Many recorded the changed sound of their changed environments outside windows, the soundscape revealing a diversity and distance different than before. Sometimes the interior is caught…a reflection of the photo taker, a phantom of anxious eyes in those framed clouds. That birdsong chorus with the addition of stir-crazy screaming children in the other room. Could we also find a way to sound the interior of the person recording in these moments, their thoughts, and feelings in all of the complication?

Soundtracks for Strange Days is looking to publish audio-visual works with this form:

1. A static moving-image shot out a window or door that includes its frame
2. The recorded sound out that window or door at that moment
3. The sound outside and behind the frame, what we cannot see…this has no rules, find a way sonically to express your interior: design, layer, process, use canned sound, use archival sounds, use the actual chaos that may be happening at that time, or another time

These works will be collected and published here periodically as part of this series, as well as put together in its own accessible archive in the future.

[1] http://digicult.it/articles/the-political-possibility-of-sound-interview-with-salome-voegelin/

Leonardo Music Journal audio compilation

Maile Colbert and Rui Costa

Artist Statement for

"Calendar, doors, and corridors"

December 21, 2012, the world may have ended.

We had made the world end with our belief and desire in the calendar. Our current calendar wasn't working. No matter how much we planned with it, we couldn't capture the present, we couldn't give voice to the past, and we couldn't plan a proper ending. We needed to believe a different calendar, a calendar that would end. We are tired and we are many, and we are not getting along. But we fooled ourselves, the calendar reset, and another long count began. So, we had to end it. We scoured the planet, leaving no culture untouched, putting things together until we thought we had a plan for the ending. We had the theory, we had the calendar, and now we had the date.

We were listening to our heavens for instruction, surely something would tell us. On December 21, 2012, we connected with NASA's Inspire VLF receiver[214] to monitor. All we could do was receive. We collected the receptions and sonified the data. When we put it together, it sang its instructions.

They said our concept of end and beginning implies a middle we are always leaving. We need to add our doors to our transitions, we need something to open and something to close behind us. We need an end to mean something, and to infuse endings and see beginnings in the thousands of endings around us. We need to hear footsteps in the hallway. We need our heavens to be heard, the frequencies in our range, tangible events to affect our senses. We need too much.

[214] NASA Inspire VLF (Very Low Frequency) program. Marshall Space Flight Center, Huntsville, AL. Listen here: http://science.nasa.gov/science-news/science-at-nasa/2001/ast19jan_1/

They said that we need to remember how to look and listen, to need less and feel more. That when we look up at the night sky, we witness a living archive of light splayed out before us. A projection of the past Universe, not the one we share within our actual present in which we are witnessing it. Stars long dead and cold, stars exploded or imploded, stars of different colors in their stages of mortality…the image we are watching has already happened and has already changed drastically. That original moment we think we are witnessing has moved on, and even further from us as the Universe expands away, like the Angel of History, looking back at the past in despair.[215] And with time the voices reach us as well, too old for us to understand them. All we can do is listen and feel.

[215] Benjamin, Walter. *Theses On the Concept of History* (1940) in Benjamin, W., Arendt, H., &Zohn, H. (1968). *Illuminations*. New York: Harcourt, Brace, & World.

CALL FOR WORK: Wayback Sound Machine, a constellation of sounding time

Maile Colbert·March 2, 2018

***Wayback Sound Machine: a constellation of sounding time*,** is an ongoing series that will be published right here on *Sonic Field* throughout 2018.

series abstract: What can we gather from sounding the past? And with that in mind, what is the relationship between soundscape and sound design?

If the study of acoustics is about sound in relation to **space**, and the study of sound ethnographies and ecologies is in relation to **place**, and the study of sound in affect and phenomenology adds **time**, a soundscape ecophilosophy in relation to sound design can interconnect the whole, the rhizome.

This series will publish and share **various artistic forms and text** of/on sound from the past, and designing and composing sound for the past, to consider what knowledge and applications can be gained from the concept, particularly within a culture and cultural history in which the visual is predominant within a segregated sensory hierarchy in mediating our perception of the world around us. This series proposes that the relationship between our soundscape and sound design can give key information about how we listen, what we listen for, and what that can tell us. The series will show that this information holds benefits and contributions towards many disciplines-including art and cinema, archive studies, ethnography, and ecology-and will investigate through artwork, sound art, cinema, sound maps, practice-based research, case studies, philosophical inquiry, and mapping a new path in sound studies connecting soundscape ecology, sound ethnography, sound art and design, and aural culture.

Artists and sound designers working with and considering sound from the past can create sonic compositions and databases that could help us to remember and feel our heritage. A fluid museum and living archive to give voice to the past and the present, while creating new experience and highlighting information within the complexity of our changing soundscapes, over a period that usually defies our comprehension. We need to sense the world, and we can enjoy sensing the world. Remembering that we aren't limited to just knowing our place in it, but can feel our place in it, allows for a

transference and embodiment of information that goes further, goes deeper, creates care and extension of thought beyond our perception of present. Creates empathy, expands, and vibrates the interior and exterior. A vibration that affects, and a vibration that joins.

This is a call for a series of publications under this theme and the title, *Wayback Sound Machine: a constellation of sounding time.* The call and series will be ongoing through 2018, and will begin in the new year. Please feel free to send any inquires and submissions to:maile@sonicfield.org