PAYING IT FORWARD: SOUND ART STRATEGIES FOR THE POST-ANTHROPOCENE

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ABSTRACT

In the 1980s, geographer Eugene F. Stoermer coined a term that has achieved pronounced attention in the 21st century. Known as the Anthropocene, the conception refers to a geological period of time from the late 19th century to the present, in which the most profound force affecting change on the earth is the collective, often unconscious action of humanity (Crutzen, 17).

In order for sound art to sustain meaning and functionality across epochs, new conceptions of time and materiality and their relationship to sound must be examined.

In this text, I will use the concept of the Anthropocene to provide a framework for envisioning and designing sound art that is informed by the prospect of the end of an era in which human activity is identified as being the primary agent of change on Earth. In doing so, I will outline strategies that can be put into place to evoke, for inhabitants of the far future, a very personal and aural sense of the contemporary moment.

1. INTRODUCTION

The specter of the Anthropocene and the extreme environmental degradation that accompanies it, points up a stark limitation to the potential lifespan of the mechanisms of global capitalism and modernity itself. As this human-defined epoch progresses, climate change and retreating energy reserves increasingly point to a near future in which global systems as a whole may cease to function in a manner that would continue to support global capitalism as it exists today. This poses drastic consequences, not only to the overall mechanisms of human survival, but to cultural constructions of media, communication and the understanding of sound itself.

Considering this, any conception of sound practice designed to extend past the current era must realign itself with time and material in order to reflect and project sound experiences in a meaningful manner. This reflection must mirror the sensibilities of a world saturated with electronic and digital media, but have no expectations of directly using said media. As the recipients might well exist beyond the reach of the mass-produced commodities afforded by contemporary global capitalist infrastructures, media reliant on electronic, electrical or even mechanical processes will likely lose any semblance of functionality for them.

This seemingly oxymoronic proposition can be instantiated by taking cues from past mediums that have survived to the present. The conception of a passive aural archive draws from preservational gestures of ancient archaeoaoustic designers and combines them with materials and techniques within the reach of contemporary subjects. By designing sonic experiences into physical, geologic and architectural structures that embrace linear and cyclical understandings of time, the lived sounds and expressions of contemporary artists have the possibility for latent long-term aural communication. Combined with passive fixed media materials that have indefinite lifespans, I will outline methods that have the potential to enable sound media artists to extend their expressions across vast spans of time and circumstance.

2. THE ANTHROPOCENE

In recent times the concept of the Anthropocene has reached almost mythical proportions, which is understandable considering the consequences that are at stake resemble apocalyptic narratives. Indeed, the consideration of the degradation of global control by human beings has spawned as varied conceptions of possible futures as religion has sects and schisms.

Although the term originated with Eugene Stoermer in the 1980s, it was not until 2000 when term reached national prominence. Co-authored with atmospheric chemist Paul Crutzen, the brief article appeared in the IGBP Global Change Newsletter and has since been increasingly in the public eye.

Although the term has popular momentum, the acceptance and understanding of the term is far from settled. The International Commission on Stratigraphy, the group charged with officially defining geologic eras for the field has of this writing not produced an official position on the matter (LaTour, 75). In the humanities, definitions and interpretations of the Anthropocene are similarly unresolved and convoluted. Imagined post-Anthropocenic eras include a wide variety of conceptions involving possible futures for terrestrial inhabitants. Many shift philosophical focus away from an extinct humanity onto other forms of possible life – what post-
human author Donna Haraway dubbed the “Cthulhucene” (Haraway, 255). Others open this literal post-human space up even further to allow for the collective intellectual capacity of computational technology to emerge sui generis from the ashes of humanity, as artificially intelligent beings born of interconnected technological systems unmoored and benignly left unguided by human direction (Bratton, 10). Still others leave room for humanity, albeit in a more humble form; a conception of future that is compelled by necessity to abandon anthropocentrism and its compulsion to constantly expand and consume. Bruno Latour, in his Gifford lecture series, outlines such an understanding, and it is his perspectives on the Anthropocene that I will use here to frame its conception.

3. LATOUR ON TIME AND MATERIALITY

3.1. Adaptation and anthropocentrism

Specifically, it is Latour’s conceit of additional adaptive understandings of time that I will engage with here. For Latour, the Western conceptions of linear time are inextricably linked with eschatological religious ideals and endless capitalist production. The understanding of time that drives Western ‘progress’ is ultimately backward-facing, defining itself by the improving upon the rejected flaws of the past as a projection toward an imagined better future. In this linear conception of time, there is a direct connection between “what is” and “what ought to be” (Latour, 125).

Latour expands on this conception in his six Gifford lectures given at the University of Edinburgh in 2013. In it he outlines new possibilities for conceptions of time that may enable crucial adaptation in the present moment. Namely, that the failings of linear time can be addressed by more cyclical understandings of temporality that include physical ecological reactivity. In other words, an adaptation of time that jettisons anthropocentrism and prioritizes ecologic reaction within its designs: “Not flat maps but entangled retroactive feedback loops” (Latour, 133).

This is not meant as an erasure of history or modernity. The inclusion of human action and thought, including linear conceptions of time is also caught up in the temporal ecological feedback. Latour presents that a consistent loopback of understanding of the present and past is vital for an engagement with the constant present that is fully aware. He urges us to “keep the loop traceable and publically visible or else we will be blind and helpless with no soil on which to settle, strangers on our own land” (Latour, 135). In order to fully grapple with the present moment, we need to inscribe the materialities and boundaries, both good and bad that pointed to it.

3.2. Applications to sound art

It is Latour’s engagement with time and materiality that will be used here as a point of entry into conceiving of sound art and the post Anthropocene. If, as John Cage suggested, that sound is not only linked to the ecology, but that sound as an action is ecology, then the prospect of sound art as a means to rework our relationship with the ecosystem is, in the present moment, strikingly imperative (Kouvaras, 115).

Drawing on Latour’s discourse of the post-Anthropocene, a conception of sound art for the moment at hand should do four things:

1. Outline how linear conceptions of time and preservation can be adapted and enjoined with cyclical, looping temporalities to produce sound art that is responsive to the present, but retains the data of the past.

2. Explore how materials play into these expanded engagements with time, place and meaning.

3. Explore how space and architecture may also be considered as a reactive, temporal material.

4. Give examples of existing and proposed works that utilize these concepts in a meaningful way.

The previously outlined schema of Bruno Latour’s understanding of linear vs. cyclical time will be used throughout this text to connect a renewed understanding of time to the works and materials discussed.

That said, the question of materials can be addressed. Specifically, the fixing of performance instructions or sound recordings within a medium intended to last for long spans of time, but can still echo the ‘loopbacked’ sense of place. Thus, the communicative properties included can be directly instructional or experientially evocative, as is best suited for the individual preserved expression. The following is a brief survey that will examine theoretical and functional frameworks that have the potential to provide sonic expression over vast distances of time and circumstance.

4. TECHNIQUES AND MATERIALS

4.1. The archive

The traditional linear methodology to interactions across large periods of time has been the archive. Namely, the preservation of traces of meaningful experience (aural, visual, and architectural) that can outlast the era in which they were created and collected. The nature and meaning of an archival instance reflects in some way the community from which it emerges. As such, the meanings projected by an archive change over time and culture.

An archive simultaneously engages three aspects of temporality: the past, present and future. An effort to preserve the present so as to engage with the future has at its core an assumption of the present as a projected past. In his text Archive Fever, French post-structuralist
Jacques Derrida referred to this tripartite temporality as “…the injunction of memory with the anticipation of the future to come” (Derrida, 79). That is, in creative projection, we put ourselves in the place of future beings in contact with a long-dead past through the conduit of the present. As such, our forward projections can be influenced and aided by an effort to engage with the linear projections of the past and the questions that might emerge.

This is all to say that although the embrace of cyclical understandings of time are essential in the era after the Anthropocene, it does not necessarily warrant the wholesale rejection of all characteristics of linear temporality. The aspect of material preservation is one of these functions that can play an essential role in the task at hand, specifically when addressing electronic and digital information and the archive.

An examination of the durability of electronic storage necessitates the discussion of the 20th century’s urgent dependence on fossil fuels, as well as the cumulative detrimental effect of their use on the global ecosystem. The prospect of the ultimate depletion of fossil fuels as well as the physical, economic and political upheavals that would accompany extreme environmental degradation, points up a stark limitation of collective digital systems. Namely, as our servers are in a large part created from, powered with, and are maintained by systems reliant on fossil fuels, what happens when the oil runs out? As a non-renewable resource, the limited reserve of petroleum lays bare a crucial weakness in long-term electronic storage: decay.

4.2. The archive and decay

The effects of decay are especially problematic for digital systems. This potential for decay has been described as a series of ‘digital dark ages’ in which the threat to data permanence changes in tandem with changes in technological trends.

The first of these dark ages involves the degradation and entropy of physical digital media and changes in hardware and software formats. Digital media, although highly reproducible and transferable, rely on physical storage mechanisms, which are often more volatile than analog formats, and are less recoverable when damage has occurred. Furthermore, the high density of digital formats makes the loss of a digital repository a more catastrophic event than an analog one (Bollacker, 107).

All this is to say that in terms of deep time considerations, it may not be wise to consider the collective digital sphere or even electronic mediums as archives that can survive into the far future. Instead we must turn to find materials that can be counted on to have a maximum longevity and are not reliant on fragile systems of infrastructure to operate.

4.3. The archive and materials

In terms of physical longevity not all media are created equal. Substances like paper and cloth decompose rather quickly and very few examples of work from the ancient world still exist today (Bollacker, 106). Some of the most durable on the other hand are ceramic, bronze and more recently, plastic. These materials tend to resist decay and are common enough to be widely available.

4.3.1. Ceramic

Archival examples of this medium are replete, with many pieces dating back thousands of years. Thus, information embedded on ceramic benefits from an extremely long potential to communicate. The ancient Minoan text known as Linear B was recorded on clay tablets dating back to 1450 BCE. Deciphered in 1955 by Michael Ventris and John Chadwick, the tablets now provide an insight into the lives of persons living over 3000 years ago (Chadwick, 81). There are limitations to any data storage system, and although the medium can last indefinitely the ability to parse the information does not. The language that preceded Linear B, known as Linear A has yet to be fully deciphered (Schrijver, 1).

Despite this limitation, the possibility of ceramic as a means of expression for the far future is distinctly appealing. The relative ubiquity of ceramic tiles along with their ability to be embossed with complex imagery and text makes them an effective vehicle for informational and aesthetic projection on a large scale, either by direct manipulation of the clay before firing, or by inscription on existing ceramics via chemical or laser etching (Figure 1).

Figure 1. Laser-etched ceramic tile.

Media longevity of notated prescriptive scores of Sumerian Hurrian songs date back to eras nearby those of Linear B (West, 161). The clear indication here is that a set of instructions either in visual or textual form can be produced to the ends of making sound as well. It
would be a simple matter to engrave myriad of pieces in many forms of notation onto ceramics. While this can be effective, it also has a risk of similar encoding problems, as the amount of persons able to read music is exceeded by those who cannot. This being the case, we can expect a higher chance of textual or graphical instruction based forms of sonic aesthetic to be more effective for future populations than pitch-based notational systems.

By focusing on a timbral, sonic transference of performative information, the limitations inherent with pitch systems can be mitigated. Instructions for the creation of sound spaces and experiences to be enacted can be easily transferred to a more permanent media that, although encoded in language and/or images, does not require electricity, knowledge of a specific flavor of pitch relationship, or any specialized instrumentation to enact. Alison Knowles’ #1 Shuffle (1961) is a clear example of instructional works that extend a sense of sound spaces and experiences to be enacted. Alison Knowles’ #1 Shuffle (1961) is a clear example of instructional works that extend a sense of sound, action and place, but require no specific technical skill by the performer, other than reading. The piece instructs a group of performers to “shuffle into the performance area and away from it, above, behind, around, or through the audience. They perform as a group or solo: but quietly” (Knowles, 4).

Graphic instructions and 'vocal tablature’ may also be employed to overcome the limitations of linguistic decay (Figure 2). Put into physical form, instructional sound pieces such as these have the ability to span vast periods of time and extend the performative possibilities far beyond the present moment.

![Figure 2](https://example.com/figure2.png)

**Figure 2.** Irish phonetic diagram for performance of fictional text poems by Róisín Madigan O’Reilly (Ford).

Beyond a re-contextualization of the social norms of sound practice as a conceptual gesture, a re-mapping of a sound space in deep time is also added. Instruction-based sound works become in a sense, a ‘recording’ of a communally-enacted sonic space that is extremely resistant to decay and that has an extremely high chance of surviving indefinitely under harsh environmental conditions that can potentially span culture and even species.

4.3.2. Plastic

It has been said that plastic is forever, and although efforts have been introduced to put biodegradable options into wider circulation, a vast amount of these materials will remain in the environment for thousands of years. Although this is a crisis from an environmental standpoint, it is a possible boon for post-Anthropocenic communication. The durability of plastic also allows a direct imprinting of sound onto the medium. While vinyl records may be durable in this respect, the technology to make them audible is dependent on electricity or mechanical means to make them operate, rendering them potentially non-functional in a relatively short time.

Other passive methods exist that do not require such technology. Talkie Tapes - (a proprietary brand) encodes sonic messages directly onto strips of plastic by varying the space and density of raised ridges along one side. By rubbing a fingernail along this edge, a recorded sound can be heard (see Figure 3).

![Figure 3](https://example.com/figure3.png)

**Figure 3.** Talkie tape – close up and full view.

Processes such as these are ideal for far future communication as they require no external mechanism. Media artist Amanda Ghassaei published an open source version of the method for constructing similar tapes using free software and 3D printing hardware (Ghassaei). Like ceramic etched tiles, plastic ‘recordings' such as these have the potential to be implemented across a wide portion of the current populace, increasing their potential for communication. Encoded plastics could be especially effective in recording the sounds of specific places onto the medium and then burying them directly beneath the place they were recorded. This could provide a direct acoustic representation of location - an aural ‘feedback loop’ of place that has the possibility of surviving into the far future.

The previous two examples also have the potential to address the desire to preserve an imagined linear connection between past present and future that is the hallmark of the modern era, but also allows for a passive recursion involving the ecology of place. By the act of burial, the sonic materials here become part of the immediate ecology they reflect, as well as allowing this very human action of recording and reflection to become deliberately caught up within a system whose temporal limits outstrip any direct connection with a specific artist. Furthermore, they have the potential to invite new
understandings of site-specific aurality that directly connect far-future inhabitants with the present, but allow for the recipients to form their own understandings and interactions with the sonic landscape present at the time of discovery.

5. SPACE AS RECORDED MATERIAL

5.1. From linear to cyclical

The aspect of shared sonic space need not be limited to the recording of specific performances or sounds. The slippery field of archaeoaoustics opens an area of possible futures. Archaeoaoustics explores the role that sound may have played in the location and construction of ancient sites like Stonehenge and the Great Gallery in Horseshoe Canyon, Utah. They postulate that the aural conditions of the environment may have been a deciding factor to the understanding of the site as being sacred places to their ancient builders (Garfinkel, 37).

If acoustic space as well as visual space was possibly modelled by ancient civilizations for the ages, why can we not do the same in the present? Constructed architectural paces already exist to this effect in whispering walls and galleries in which even very quiet reverberant sounds can be heard clearly at a distance, such as London’s St Paul Cathedral (Figure 4).

![Figure 4. Whispering gallery acoustics at St Paul’s Cathedral (Wright).](image)

In a reconceptualised archaeoaoustic gesture, the built structures of archival acoustic architecture seeks to preserve the sounds and noises of modernity as reflection of the possible aural commonalities with the post-Anthropocenic era. These are not made with any hierarchical asssignation to sound and modernity, but as an effort to fold the archival sensibilities of durable architecture into an ephemeral sense of organic cycles. Thus, they stand in contrast to R. Murray Schafer’s preference of the natural ‘Hi-Fi’ soundscape over mechanized modern ‘Lo-Fi’ sound (Schafer, 71). The necessities of the separation of aesthetic valuation of the ‘natural’ as opposed to the ‘artificial’ is subsumed by a reverence for each. Thus, we can enact a space in which sound, when ‘frozen’ into space, can engender to post-Anthropocenic beings a critical and cultural reflection of the present moment. Far from isolating sound from collective experience, the archeoaooustic approach fuses the two together in a preserved, lived space.

5.2. Acoustic exteriors

Examples of contemporary archeoacoustic sound art approaches are currently extant. The following are some examples of artists and locations that exhibit characteristics of constructed space as record for designed sound.

5.2.1. Wave organs

Wave organs use the movements of the ocean upon the shore to power passive soundscapes. Of the three that currently exist worldwide, one of the most well known is in San Francisco and was created by Peter Richards and stonemason George Gonzalez (Figure 5). The Wave Organ was completed in 1986, placing a circuitous series of concrete pipes in the local jetty of the San Francisco yacht club. The tubes amplify and alter the rushing and gurgling sounds form the waves, responding to changes in the tide.

In addition, the organ used salvaged concrete and granite from the city and a local demolished graveyard, involving a visual and physical space of contemplation, memory and temporality in which sound is only a portion of the experience. The artist describes the sound as one that is “…a function of the relationship between … the Earth to the moon to the sun, which of course effects the weather, the seasons.” The human subject does not experience the piece form afar but becomes “…a part of the soundscape” in a physical and enacted manner (Richards).

![Figure 5. Wave Organ by Peter Richards and George Gonzalez.](image)
and perhaps more deeply rooted in local tradition than in an engagement with the sound of the ocean per se.

A third organ exists in Blackpool, England. Built in 2002 by public artist Liam Curtin the Blackpool High Tide Organ is a more imposing structure than the other two, zinc, copper and steel structure standing at over 49 feet in height. The organ operates much in the same fashion as Bašić’s, but is less regular in its function. Whereas Bašić’s organ produces relatively constant tones, Curtin’s structure more directly reflects the action of the tide, wheezing a chorus of tones as the tide rises and falls, in a manner resembling a discarded bagpipe. The tones are more centered in the ‘natural’ phenomenon as well, sounding only with the high tide and spelling out 18 tones of the natural harmonic series rather than an even-tempered scale.

All of these spaces architecturally extend and alter the natural environment while remaining a permanent alteration of place. They do, however, seem to exhibit more anthropocentricity the more recent their construction. This may exhibit a necessity to meet the demands of the immediate expectations of local governments rather than focusing on heady ideas of permanence. This may be due also to the fact that the first to be built was commissioned by a museum rather than local governments. This can be seen in Nikola Baiae’s documentation of Bašić’s piece. As the acoustician responsible for making sure the technical aspects of the project went according to design, Baiae also presents public opinion polls of the project, indicating that public acceptance and attraction, rather than long scale time communications were the order of the day (Stambač). Thus, architectural sound spaces take on and reflect a variety of cultural and economic realities that the sound artist must grapple with.

5.2.2. Free-standing exterior interventions

The lithographs of Sardinia artist Pinuccio Sciola also use place and permanence as a site on which to enact of sonic palimpsest. This artist directly carves into massive blocks of basalt. The areas of stone left form matrices which, when brushed or struck create lush pan-diatonic and microtonal tones. The artist connects his work to events that coalesce the interaction between stones and human events, dedicating works at the site of a 1904 strike by miners that was violently suppressed. The sculptor embraces a sort of religious vitalism citing in a 2008 piece dedicated to St. Frances of Assisi that even as the saint was talking to the divine, that “…the sun, the moon, the stars, the animals, the stones were listening,” (“Ad Assisi…”). This kind of positioning of the artist foregrounds the non-human and inanimate while at the same time embraces a reverence for human suffering and experience.

5.3. Acoustic interiors

A similar gesture toward the archaeoaoustic architectural potential for the preservation of linear culture alongside passive, loopback activity from the local place can be found in the work of German artist Lukas Kühne, who installed a permanent structure in the fishing town of Seydisfjordur in 2012. Named Tvisonger, the piece consists of a series of domed rooms, each designed to resonate and amplify at a specific frequency present in traditional Icelandic pentatonic scales. Visitors can use their own voices or experience the ambient sounds as they excite the various tones.

This site exemplifies the dual imposition of linear and cyclical understandings of time. By its permanent nature, and intent to preserve an ephemeral cultural practice, it draws from the linear archival tradition. Its lack of directly recorded instructions and acceptance of possible misunderstanding future reinterpretation open it up to cyclical functions and meanings.

Figure 2. Tvisonger by Lukas Kühne.

5.3.1. Silent interiors

Negation, in this context, can be a highly effective technique. The creation of silence or Schafer’s ‘Hi-Fi’ soundscapes, in some ways highlights dissolution of sound as a reflection of the modern moment itself. To ward off indigenous sound is to impose control of and reject the agency of place. Silent space can only be truly accomplished with the most modern of substances: thick glass and artificial sound dampening materials. To this end, artistic gestures echoing John Cage’s 4’33” take on a renewed and extended meaning. Joris Hekkenberg’s piece Tacet is an excellent example of potentials that a shift in the understanding of silence can afford expressions of sound and time.
6. CONCLUSION

If, as Christopher Small writes, a performance space "...dramatizes and makes visible certain types of relationships" (Small, 27), what can all this mean in terms of meaningful interactions with distant future listeners?

Small gives another indication of the notion of collective sound creation not only as the act of making music, or 'musicking', but as creating collective legends or 'mything' (Small, 101). This ritualistic mythical aspect of sound production offers perhaps a helpful perspective in the imagining of future sound spaces as wildly collaborative, open-ended and inherently mythic. Although Archaeoacoustic claims are difficult if not impossible to prove, one cannot deny the epic and mythical qualities of the imagined scenarios. To impart into an acoustic experience of Stonehenge a long dormant aural communication with long-dead peoples is to intone the voices of the dead into the standing stones - a mythical prospect indeed.

To pay forward this past sonic potential to future beings (human or otherwise) is an opportunity to pay respect to the linear archival gesture while understanding its limitations. In addition, the ephemeral nature of sound make it distinctly poised to introduce a performative impermanent feedback essential to life after the decline of the Anthropocene.

7. REFERENCES


