The Shadow of Polaris: Understanding Sound and Place

Burke Travis Jam

The University of Montana

Follow this and additional works at: https://scholarworks.umt.edu/etd

Let us know how access to this document benefits you.

Recommended Citation

Jam, Burke Travis, "The Shadow of Polaris: Understanding Sound and Place" (2013). Graduate Student Theses, Dissertations, & Professional Papers. 1381.
https://scholarworks.umt.edu/etd/1381

This Thesis is brought to you for free and open access by the Graduate School at ScholarWorks at University of Montana. It has been accepted for inclusion in Graduate Student Theses, Dissertations, & Professional Papers by an authorized administrator of ScholarWorks at University of Montana. For more information, please contact scholarworks@mso.umt.edu.
THE SHADOW OF POLARIS:
UNDERSTANDING SOUND AND PLACE

By

BURKE JAM

Bachelor of Arts, Fine Art
University of Montana, Missoula, MT, 2007

Thesis

Presented in partial fulfillment of the requirements
For the degree of

Master of Fine Arts

The University of Montana
Missoula, MT

Spring 2013

Approved By:
Sandy Ross, Dean of The Graduate School

Graduate School

Professor Brad Allen, Chair
Fine Art

Professor H. Rafael Chacón PhD
Fine Art

Professor Charles Nichols PhD
Music
## Table of Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Image List</td>
<td>ii</td>
</tr>
<tr>
<td>Abstract</td>
<td>iii</td>
</tr>
<tr>
<td>Introduction</td>
<td>4</td>
</tr>
<tr>
<td>Background</td>
<td>5</td>
</tr>
<tr>
<td><em>The Shadow of Polaris Exhibition</em></td>
<td>7</td>
</tr>
<tr>
<td>Sound in Art: A Critical Overview</td>
<td>11</td>
</tr>
<tr>
<td>The Natural</td>
<td>12</td>
</tr>
<tr>
<td>The Ephemeral</td>
<td>14</td>
</tr>
<tr>
<td>Biophilia, Technophilia and Sonification</td>
<td>16</td>
</tr>
<tr>
<td>Conclusion</td>
<td>17</td>
</tr>
<tr>
<td>Bibliography</td>
<td>18</td>
</tr>
</tbody>
</table>
Image List

1. Sonification 4 (Ephemeral States), Installation View, 2013
2. Sonification 4 (Ephemeral States), Installation View 2, 2013
4. Sonification 1-3 Rubric for Score, Performance Notes, 2013
5. How We Talk About What We Talk About (Positive), Iron Cast Timber Frames, 2011-2012
6. How We Talk About What We Talk About (Negative), Open Face Timber Frame Reaction Molds, 2011-2012
7. Walking a Spiral, Listening to Its Center, Returning, Detail, site-specific field recording, Spiral Jetty, 2011, 22 minutes.
8. What We Heard There, site-specific Aeolian harp installation, Sun Tunnels, 2011, Photo: Brad Allen
The Shadow of Polaris: Understanding Sound and Place

Chairperson:  Associate Professor Brad Allen

The Shadow of Polaris examines perception, perspective, and place. My research investigates a critical theory of sound as phenomenon and art object. The phenomenon of sound informs our perception and perspective of place. It articulates questions about how we experience and interact with the physical world. My intention is to create an experiential understanding of the physical and, more specifically, the natural world. Nature’s ephemeral cycles are symbiotic with the human experience of life. Examining this relationship illuminates how we perceive, experience, and interact with the world. With human population close to seven billion, the natural world is at a critical point, socially and ecologically. My questions are further explored by examining the ideas of biophilia, technophilia, and sonification. The relationship between these ideas is synchronous with the idea of intimacy with place in today’s world. If we listen, our pre-existing ideas of what we know about our world, and our place in it, begin to shift. Polaris, the historical visual beacon of location, becomes a new point of reference. Our ability to interweave information about perception, perspective and place into clear points of connection, allows us greater understanding of our world and the vital relationship we each have with place.
The Shadow of Polaris: Understanding Sound and Place

Introduction:

From Salomé Voegelin’s *Listening to Noise and Silence*:

Listening’s focus on the dynamic nature of things renders the perceptual object unstable, fluid and ephemeral: unsettling what is through a world of sonic phenomena and audible spirits. Sounds are like ghosts, they slink around the visual object, moving in on it from all directions, forming its contours and content in a formless breeze.¹

This quote comes from one of the pivotal critical texts on sound art in contemporary practice. Voegelin deftly articulates the challenge and power of sound in contemporary art practice. This idea concurrently establishes the opening idea and foundation of my research. The imperative drive to move art practice beyond the perceived realm of the visual, into a more holistic and experiential practice, is emergent in many walks of contemporary art. It is evident that the existing models of music theory, art theory and cultural theory have much in common. However, the overlap of these fields often leads to gray areas, rather than to a more resolute understanding of where we are and why.

The overlapping and evolving fields of sound-art, sonification, experimental composition, phonography, field recording, spatial tuning, acoustic ecology, and listening practice, all point to a shift in contemporary understanding of art and culture. I will outline my background, influences, and establish my position historically and critically within these fields as well as explain the core ideas that inform my practice: the natural, the ephemeral, biophilia and technophilia, and sonification.

My practice and my research are interdisciplinary. As an artist, musician and smokejumper, my thesis research is focused on the relationship and engagement of these three things. In my research, sound is both the idea and the object. I work with physical and ephemeral materials. I am particularly interested in the place where these intersect. My process is mechanical, analogue, and digital.

¹ *Listening to Noise and Silence* (New York: The Continuum Publishing Group, 2010), 12.
Learning how to hear is an often-overlooked aspect to the arts, but proves a vital role to the world and our relationship to it. This awareness must be achieved to push forward new ways of thinking in contemporary practice.

...*One of the primary functions of a scientist or an artist is to explore and expand the concepts of reality. The artists who have proved most valuable to their society have done so by posing new questions rather than asserting answers...*²

The exhibition and research for this paper have been a process of listening: not for an answer, but for a question. At the beginning of my graduate career I had a series of questions that I wanted to explore in practice. Those questions have become the wellspring for my investigation into an experiential relationship with sound and place. This paper will trace the trajectory of my practice and research, by examining the points outlined above throughout my Thesis Exhibition, continued research and artistic practice.

The “Shadow of Polaris” is a reference to the visual beacon and polestar Polaris. I chose this title from W.S. Merwin’s *The Shadow of Sirius*³, as a metaphor for a new way to understand place, specifically aurally. We all experience sound on different levels; it affects our experience and understanding of place. The shadow both implies the idea of what we experience in darkness, as well as what we experience as we shift perspectives into new and different ways of thinking about visual art.

**Background:**

As an artist, place is fundamental to my work and research. I was born and raised in rural Montana, a place where life is dictated more by forces of nature than by urban social constructs. That is, life does not move by traffic patterns, but by how nature allows or does not allow us to move. My experiences of Montana—its land, history, and mythology—have led me to question how one comes to truly know a place. I believe art to be vital in understanding culture and place.

---

³ *The Shadow of Sirius*, (Port Townsend, WA: Copper Canyon Press, 2009).
In visual art specifically, sound transcends and creates new conduits of experience in understanding cultural identity and physical place.

As I began to realize the effects of sound on my perception of place: the rolling thunder, the roar of fire, and the subtle quiet of the wilderness, my attention was re-directed to how we relate to physical place as human beings. Upon graduating high school, I joined AmeriCorps*NCCC and spent ten months in volunteer service, living and working in the Southeastern U.S. Once I began college, the drive to continue to explore place, physical and cultural, led me to take a job with the Forest Service. Within three years of basic firefighting, I was accepted and completed training as a Forest Service Smokejumper. This experience further informed my drive to explore and understand place. It lit the ember to understand place as an artist. Through the direct experience of working with the land, this experience created an artistic philosophy within me, in which the landscape and its ecology are essential to how we live on this planet and our relationship to it. Our relationship to the landscape and to each other is at critical point in the ecology of the planet. The fields of Natural Musicology and Acoustic Ecology are thus extremely significant to my research.

In 2008 smokejumping brought me to Fairbanks, Alaska, home of composer John Luther Adams. On a day off, I found myself at the Museum of the North at the University of Alaska. On this day my perception of land, people, art, and most importantly, sound, fundamentally shifted. I experienced Adams’ permanent installation, The Place Where You Go to Listen, “a musical composition in the shape of a room,” as Adams later referred to it in conversation with me. It affected me deeply. Overlooking the plains south to the Denali Range, I entered the work and experienced light and space, sound and time—real-time. This “musical composition” is a series of constant and droning sounds, each manipulated by data collected on seasons, weather, aurora, and tectonic activity being measured 24-7. This data is fed into a program, generating composed sounds and light specific to each phenomenon—sonification.

This artwork moved me to research the dynamic medium of sound in visual art as an MFA candidate at The University of Montana. This work was more than music or installation. It was the opening question that drove me to deeply investigate physical place through sound. This first question opened a world of possibilities as a visual artist, exploring how one communicates a sound-based concept of physical place for others to experience and understand. I have an extensive background in music and performance, as well as a Bachelor of Art, Fine
Arts Degree. Through these experiences, my work came to fruition. Sound is art—ephemerally, physically and sculpturally. More importantly, sound is place and an extremely powerful activator for experiencing and understanding the world in which we live. John Cage observed, “There is no such thing as silence.” Now more than ever, I believe we must listen.

**The Shadow of Polaris Exhibition:**

The “Shadow of Polaris” exhibition was made up of two components: a gallery-based installation in The Gallery of Visual Arts at the University of Montana, from February 21 to March 6, 2013 and a site-specific performance work for The Music Recital Hall at the University of Montana, on the evening of March 1, 2013.

The exhibition, in both parts, was a direct dialogue with the underlying themes of my work. The intention was to synthesize form and craft with concept, into both a traditional gallery installation experience and a site-specific work in the Music Recital Hall. As most of my site-specific work has occurred in natural physical settings, not often publicly accessible, and not permanent, *Site Performance: Sonification 1-3* was intended to bring the site to the audience. I also hoped to create a dialogue with Robert Smithson’s idea of the “Non-Site”.

*Sonification 4 (Ephemeral States)*, was an installation piece combining material, process, sound and place in dialogue with Smithson’s “Non-Site”. The work consisted of a 40”x80”x40” base lit Plexiglas container wired with an array of contact microphones and at the opening, a 300lb block of ice. The intent of this piece was to explore sound and the idea of sonification as the basic idea of translation of visual information into sonic information.

This piece first established the idea of the contingency of the object in relation to sound. The speakers amplifying the piece established a visual indication that the audience should be listening to the ice. The piece also was a literal and visual cue of the ephemeral nature of the physical world and that nature’s relationship to sound. As the ice melted, the passing sounds captured by the microphones, also disappeared. Most importantly, the piece articulated the significance of experimentation in practice and of risk-taking as an artist. My simple goal was to

---

6 Ibid. 177
capture the visual beauty of water of frozen water in the natural world, sonify it by capturing the melting process, and amplifying it with of contact microphones.

![Image](image_url)

**Fig. 1 Sonification 4 (Ephemeral States).**

**Fig. 2 Installation View 2, after change in process.**

The piece was a major undertaking for me and pushed my limits as a sculptor and my expertise with microphone techniques. Upon installation of the block of ice, the team lost control of the block and shattered one end of its Plexiglas container. The container was re-sealed and the block positioned for the opening. However, the only sound captured was that of the audience in attendance being picked up by the amplified container.

This presented a functional challenge, which led to my reconfiguring the work, as seen in Fig. 2. I designed and had a new piece of Plexiglas fabricated to match the scale of the original block of ice with holes drilled in it. This allowed for multiple smaller blocks of ice to be installed each day, and their elevated position allowed for the dripping to activate the microphones. The smaller blocks could also be installed and de-installed from the gallery to the freezer each day, and slowed the process of the ice melting.
Site Performance: Sonification 1-3 was a site-specific performance of experimental composition. It consisted of three 360-degree panoramic photographs animated to rotate on screen from right to left—creating the effect that the seated audience could watch each landscape move around them. Each photograph was treated like a visual score for the Stellarondo Quartet, performing live in the Music Recital Hall. This piece was spatially and acoustically designed for the Music Recital hall. Each instrument used by the quartet was specifically chosen and positioned throughout the hall, surrounding the audience and allowing the sounds to move throughout the space.

The rubric for the score was based on an earlier work, Cloud Music 1-4, in which I photographed clouds and scored them for paper scroll music boxes in the key of C Major. Here these were based upon the shape and contour of each cloud. By applying this contour to a musical staff, I was able to plot points, which became the notes for each music box.

This same technique was applied to the panoramic site photographs. In collaboration with Bethany Joyce, cellist for Stellarondo, we developed a simple, but effective, musical rubric for the quartet to sight-read the moving images, Fig.4.
Like Cloud Music, this was also developed for the key of C Major. Using a piano staff gave me the range to voice each of the instruments in the quartet as well as a simple reference point of Middle C reflecting the horizon line in each photograph. We also broke each voicing into a different mode to simplify what notes each player would have to work within: bass-mixolydian, tenor-locrian, alto-dorian, and soprano-lydian. The instrumentation utilized for each voicing was double bass-bass, cello/saw-tenor, pedal steel/oscillator-alto, and banjo/oscillator/voiced plastic wind tubes-soprano.

The goal of this rubric was to score a guide for players to read the visual images as they passed across the screen, but to avoid writing a fixed piece of music from the images. More specifically, I wanted to allow for synchronicity within the quartet’s interpretation of the score and the landscape which they where directly sight-reading. For example, the bass voicing would visually translate to the lower quarter of the photograph, however within that lower quarter the depth of field allows the player an array of points to choose to play from. In juxtaposition, the alto range of each photograph becomes the third quarter of the photograph, which references the actual topographic landscape, creating a more direct line for the performer to read from.

I created both components of The Shadow of Polaris to experiment with understanding the natural world or place, through ephemeral process, sonification, music, performance,
biophilia-technophilia, site and non-site, and in many ways enunciate the vast overlap in theories between the visual and the sonic for me as an artist as explained below.

*(John) Cage’s work is to miss the point, for “letting sounds be themselves” initiates a conversation in which the musical and found sounds merge, making music a cultural paradigm beholden to sound and its situatedness.*

In essence, what these works examine is what Cage helped remind us: that music is a rubric to describe the phenomenon of sound. Understanding this idea allows for a more intentional use of musical language in sound-art.

**Sound in Art: A Critical Overview:**

To further my thesis, it is important to include a brief critical overview in sound-art. I will point out the fundamental aspects of sound in theory that informs my practice, as well as the work for *The Shadow of Polaris*. Additionally, this overview will to allow me to expand my vernacular between the sonic, the visual, and their relationship to each other.

The foundation for a critical theory and language around sound-art begins with phenomenology. Adams posits, “Both light and sound are vibrations. They simply move at slightly different speeds.” When one considers the world of “visual art” through the phenomenology of light, stripped to a simple form: a vibration or light wave, the entire system of visual language comes into focus and one begins to build an understanding of visual language and its theory. The same can be established when one considers the phenomenology of sound, a vibration, or sound wave. The most striking observation is that both activate different senses in the human experience. The light spectrum and the sound spectrum in waveform are, in fact, quite similar, however they move at different speeds.

Considering this concept, the major influences in the advancement of understanding sound beyond traditional visual art or music theory, and further allowing for the ability to

---

8 *Background Noise, Perspectives on Sound Art* (New York: The Continuum International Publishing Group, 2010), 21.
9 Personal Interview with John Luther Adams, Transcript, 2011.
synthesize a more acute language set, it becomes evident that a philosophy of sound art must be holistic. In much the same way sound art in practice must not assert itself according to Berger’s Hierarchy of the senses,\(^{11}\) but rather work in tandem with visual understanding.

My research explores interdisciplinary examples that range from music, to visual art, to science, and archeology. These include John Cage’s vast career/critique on music, Richard Serra’s 1969 collaboration *Loveladies* with Phillip Glass, the California light artists’ “investigation of the whole process of seeing, and perception itself;”\(^{12}\) and Miriam Kolar’s current archeological acoustic research at Chavin de Huantar, Peru. This trajectory also begins to coalesce in emerging critical texts such as Salomé Voeglin’s *Listening to Noise and Silence*. The field of critical theory in sound must be understood in much the same way sound-art in practice should function—to build a defined theory that allows for a holistic approach to reconsider the world around us. I employ this research in the following sections.

**The Natural:**

*The places we live in resonate within us. The sounds around us—the songs of birds, the cries of animals, the rhythms of the seasons and the reverberation of the elements—all echo in the music of a place.*\(^{13}\)

Some of the earliest work in my graduate career began with a simple but informed idea of natural sound. My works began in the vein of acoustic ecologist Gordon Hempton. His book *One Square Inch of Silence* launched me into an investigation of the natural world, by simply listening. I began to seek out more and more remote locations. This process even began to overlap in my career as a smokejumper. On long summer days towards the end of a fire, I began taking field notes of environmental sounds, recording durations between man made sound and the sound of the physical place.

I quickly realized the cacophony of natural sound, and how much I had previously tuned out or been oblivious to. This led me to purchase my first field recorder and begin sonically


documenting each site. These site visits became works in themselves, akin to the walks of Richard Long. Like Long’s walks, these experiences were ephemeral and fleeting, but they tuned me to each site in a way I had not yet experienced. I became immersed in how much the natural world had to inform me if I just listened. I also became aware of the ephemeral relationship between sounds, the cycles of the natural world, and the human experience itself.

This realization became critical in how I wanted to develop and convey my artistic practice. It also became the foundation for the critical footings of my work. In both components of *The Shadow of Polaris*, the natural world is emblematic, revered, left to its own devices, and dictates much more of the work than I do as the artist. This is my intent and goal throughout much of my practice. I find that the more I work in tandem natural elements, the more dramatic the results. My drawing techniques, iron casting, and photography also exemplify this.

![Fig. 5 How We Talk About What We Talk About (Positive, Negative), Iron cast timber frame and reaction molds.](image)

Each of these works embodies an approach to avoid absolute control over materials, rather it allows for materials to act upon themselves. This was evident in the installation of *Sonification 4 (Ephemerical States)*. After hours of design, discussions, and fabrication alterations, the pristine mirophonic container for the ice block was shattered, in a matter of seconds, by a simple miscalculation. This was a sharp and astute reminder of what is actually at
play in my work: not the design and fabrication of the object but the simple power of natural elements—in this case, frozen water.

The Ephemeral:

In practice, the underpinnings of my experience of the natural world are tied to the idea of the ephemeral. My work is about experience, time, and place. The idea of the ephemeral presents itself and informs the heart of my work in every corner of practice. Additionally, when considering the idea of the ephemeral, there is a clear lineage through art history that includes some of the most influential works to my practice.

One of my favorite examples is Richard Serra’s, *Tilted Arc*. This work embodied the idea of the object via mass, scale, and material. However, the real power of the work came not from the work itself, but from the experience it created, and the ghost it left behind, after its much-debated removal in 1989.¹⁴ Historically, the impact was not of monumental scale and object-hood, but the experiential, fleeting, effect the work had that continues to resonate today.

Two additional works that further articulate this idea are Robert Smithson’s monumental earthwork *Spiral Jetty*, from 1970 and Nancy Holt’s equally pivotal *Sun Tunnels*, from 1976. While both works have certainly had their due share of theory and criticism as monumental, sculptural, site-specific works, the idea that does not exist in most writing around them is that they are indeed ephemeral. To view both as ephemeral raises an interesting question they are both massive object-based environmental pieces, so what makes them ephemeral? The answer is in their physicality. *Spiral Jetty* is in a constant state of change. From its creation, through today, the work ebbs and flows into the visual plane—with tides of Salt Lake at Rozel Point. On a continuum of change, the work is never the same. We easily overlook this, based on our human perception of time; however, it was not something Smithson overlooked. “Each drop that splashed onto the Spiral Jetty coagulated into a crystal. Undulating waters spread millions upon millions of crystals over the basalt.”¹⁵ This quote not only reflects Smithson’s attention to the ephemerality of his work, but also his acute understanding of the natural physical place the work is sited seen in Figures 6 and 7.

---

This is also true of Holt’s *Sun Tunnels*. The four concrete tubes aligned to the sunrise/sunset of the summer and winter solstices will ultimately and inevitably lose their alignment as the earth continues its movement through the solar system. The constellation markers bored in the sides of each tunnel, corresponding to the constellations present at summer and winter solstice, will also eventually fall out of alignment due to universal celestial movement.

Perhaps the most striking element about these works is also the profound effect of sound. Both works are attuned to and situated within their natural sites, thus the physical and ephemeral sound of each place cannot be detached from either work. I have explored this in two pieces: *Walking a Spiral, Listening to Its Center, Returning*, 2011 (a field recording describing the scale and site of *Spiral Jetty*) by walking the entire jetty and recording the duration of the walk, and in *What We Heard There*, 2011 (a site-specific, Aeolian harp installation) by utilizing wind, one of the prominent natural forces at the sun tunnels.

![Fig. 6 Detail: Field Recording *Spiral Jetty*, 2011](image1)

![Fig. 7 *What We Heard There*, Aeolian harps, *Sun Tunnels*, 2011](image2)

The ability to appropriate and work in dialogue with each of these major historical pieces invigorates and re-define our understanding of each: naturally, ephemerally, and aurally.
Biophilia, Technophilia and Sonification:

As humans, how much do we relate through biophilia to our world? How much are we distracted by the technophilia-based culture in which we live? Where and how do these concepts intersect? I am interested in making clear their intersection through the idea of sonification.

Sonification, simply explained, is the translation of visual information into aural information. It operates on many levels, from contemporary composition, to the direct digital transfer of pixilation to points of sound. This type of thinking moves Walter Benjamin’s 1936 essay *The Work of Art in the Age of Mechanical Reproduction* into an entirely new line of thinking about the role of art. No longer are we considering the impact and implications of the mechanical on the visual world. We must now consider the sonic repercussions to our perception, interpretation, and understanding of the visual.

These three ideas become a balancing act. The innate attraction of living organized systems asserted by biophilia is both threatened and advanced by the notion of technophilia. Sonification becomes the fulcrum point between each. When we use technology and the love of technological systems to better understand and empathize our own experience of the physical world we, can move forward globally in great stride. However, if we lose site, as theorized by Jean Baudrillard’s 1981 text *Simulacra and Simulation*, of the real physical world to the advent of a technological/simulated reality, our actual world and our roles in it come into grave danger.

In 2012, *Orion Magazine*, whose subsequent tag line is “Nature, Culture, Place”, published a fascinating review of Icelandic musician Björk’s recent release *Biophilia*, illustrating this very crux. Author Jay Griffiths articulates, “The whole concept seems to suggest that a generation raised on technology may only feel biophilia through technophilia, as if the more artificial a representation is made the more an audience will respond.” The article, however, continues to assert Björk’s desire to “reconnect musicology with nature…to make bass lines behave like gravity.”

---

*17* *Simulacra and Simulation* (Ann Arbor: The University of Michigan Press, 1994) 121-129.
Conclusion:

From John Cage’s Silence:

*The highest purpose is to have no purpose at all. This puts one in accord with nature in her manner of operation. If someone comes along and asks why?, there are answers.*\(^{19}\)

I return to this thought, as it has impacted my practice and research profoundly in many ways. This concept of nature brings into focus the critical significance of my work. The world we live in, sociologically, is no longer as simple as Cage’s concept. For Cage, this thought existed as a meditative reflection on nature. Today his reflection must be balanced with the rapid technological changes and development in global culture. I work to put “one in accord with nature and her manner of operation,” by moving with specificity and discipline to articulate critical questions.

At the beginning of my graduate career, I had questions. As I move forward, my questions have become more acute. They have also become my practice. It is my goal that these questions can be asked in a way that they function experientially. Further, it is my goal in asking these questions, to guide my audience to appropriate a new perspective on the world in which we live, and our physical relationship to it through sound. Specifically, I believe sound to be one of the most intriguing and vital ways for us to re-interpret the possibilities of art, culture, and the world. As referenced earlier by William Dunning, “One of the primary functions of a scientist or an artist is to explore and expand the concepts of reality.”

Science and art are not that far removed from one another and from the most important questions that come from the simple, yet poignant, act of listening. As an interdisciplinary artist I strive to interweave practice, art history and critical theory, synthesizing new ways to understand perception, perspective, and place through sound. My goals are: to activate dialogue consistently; push further, culturally, creatively, and inquisitively; and to continue to create work that re-imagines our experience of the vast natural symphony, unfolding within the physical world.

Bibliography:

Adams, John Luther, From Personal Interview, Transcript, 2011.
LaBelle, Brandon, *Background Noise, Perspectives on Sound Art* (New York: The Continuum International Publishing Group, 2010), 21.