

“To Be All Ears”:

How Deep Listening Artists Promote Listening to and with Environments

by

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## ABSTRACT

How have humans listened to and with environments, and what creative works may such listening prompt? This dissertation delves into these questions by focusing on Deep Listening, a meditative practice for expansive awareness associated with American composer Pauline Oliveros. Deep Listening has grown into an international network which has not received scholarly attention. In this dissertation, I trace its evolution from Oliveros's early use of tape recorders, her group work with the ♀ Ensemble and Deep Listening Band, and establishment of the Deep Listening Institute and later Center for Deep Listening which support worldwide trainings, workshops, and publications. I also investigate Deep Listening's multicultural influences, environmental foundations, and related traditions (including the Aboriginal approach of dadirri), all aspects underexplored in musicological literature.

Crucially, I study Oliveros's collaborations with author Ione and dancer Heloise Gold who together established the essential but overlooked Deep Listening modalities of listening, dreaming, and moving. As a certified Deep Listening facilitator, I shed light on these vital modalities from my own experiences. I investigate how diverse beings – including humans, nonhuman animals, plants, and stones – are listened to and with, how listeners construct sonic experiences, and how select artists cultivate listening modes to advance recognition of the more-than-human world.

In addition to Oliveros, Ione, and Gold, this dissertation illuminates key figures shaping the ongoing Deep Listening enterprise, offering a much-needed perspective. Case studies based on oral history interviews center on Ximena Alarcón Díaz, Tina Mariane Krogh Madsen, and Kite, artists who represent diverse expansions in the Deep Listening

community. Artist-researcher Alarcón Díaz incorporates migration experiences, performance artist Madsen highlights more-than-human collaborators, and multimedia artist Kite showcases an alternative approach through Lakhóta-informed works. Revealing varied experiences of sonic worlds, each artist uses recording technologies and dreaming for connection with more-than-human beings.

Drawing on Western and Indigenous concepts of sound and listening, this dissertation engages scholarship in electroacoustic and experimental music, acoustic ecology, ecomusicology, phenomenology, and multicultural listening practices. By contextualizing and investigating Deep Listening in a fresh way, I exhibit how listening can encourage environmental awareness and deepen connections with ourselves, each other, and the more-than-human world.

To Olive

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## CHAPTER 1

### INTRODUCTION

#### **Topic Introduction**

A vivid and bright chiming, a brilliant jangle, and the tinkling of cascading notes dissolving into a ringing wash of resonance were the sounds that caused me to palpably react in my mother’s womb, kicking during her handbell choir rehearsals. Sound remained important to me as I grew up, yet, despite abundant musical activities and studies, I did not think seriously about the act of listening until I began doctoral studies and joined the Acoustic Ecology Lab at Arizona State University. Learning about listening modes practiced in acoustic ecology, Deep Listening, Indigenous approaches, and other traditions opened new experiential dimensions, nurturing my deepening awareness of sound and environmental listening.

In this dissertation, I provide an in-depth investigation of philosophies and practices of listening by exploring concepts of sound and listening and challenging assumptions about sound, who listens, what is listened to, and how we listen. My research is driven by questions on how diverse beings – including humans, nonhuman animals, plants, and stones – are listened to and with. I concentrate on the Deep Listening practice and artists who encourage awareness of more-than-human experiences, and I draw out interconnections and relationships centered on sound and listening. A commonality prevails among the selected artists to situate “othered” bodies as sites of knowledge, and I highlight how they each implement sound recording technology, movement, and dreams in their work to aid listening. My aim is to broaden such awareness of sound and listening for readers.

Though commonly deemed ordinary, sound and the act of listening are often misunderstood or little understood. They are complex and inextricably connected phenomena, which I will demonstrate, and as such, they should be carefully considered, providing a basis for the various listening practices covered throughout this dissertation. Reviewing the intricacies of sound and listening avoids the potential for oversimplification, marks sound and listening as individualized rather than universal, guides my later interpretation and readings of pieces, and reconciles terminology across disciplines. For example, the term “sound” carries a multitude of meanings and definitions. In physics, it is described through the properties of soundwaves, which travel through media and are absorbed by various bodies. It is also “the sensation produced in the organs of hearing when the surrounding air is set in vibration in such a way as to affect these.”<sup>1</sup> According to scholars in psychoacoustics,<sup>2</sup> the brain then translates the sensation into understandable phenomena. Throughout this dissertation, I focus on this lived experience.

In Western classical music, sound is associated with concepts of pitch, timbre, dynamics, melody, harmony, and rhythm. Music can also be understood, in experimental composer Edgard Varèse’s terms, as organized sound and “the organization of sound into a shape privileged by history and canons, set apart by virtuosity and the esoteric

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<sup>1</sup> *Oxford English Dictionary*, “sound, n.3,” September 2021, <https://www-oed-com.ezproxy1.lib.asu.edu/view/Entry/185124?isAdvanced=false&result=3&rskey=jKNAtg&>.

<sup>2</sup> For more on psychoacoustics, see Paul Oomen, “Psychoacoustics: An Introduction,” *Red Bull Music Academy Daily*, February 6, 2014, <https://daily.redbullmusicacademy.com/2014/02/psychoacoustics-introduction-feature/>; Garth Paine, “Listening to Nature: How Sound Can Help Us Understand Environmental Change,” *The Conversation* (US), December 21, 2018, <https://theconversation.com/listening-to-nature-how-sound-can-help-us-understand-environmental-change-105794>; William A. Yost, “Psychoacoustics: A Brief Historical Overview,” *Acoustics Today* 11, no. 3 (Summer 2015): 46–53.

knowledge of the discipline.”<sup>3</sup> Other composers of electroacoustic music, specifically acousmatic music, have conceptualized sound as an object, referring to recorded sound,<sup>4</sup> and acoustic ecologists conceptualized soundscapes.<sup>5</sup> Such notions trace enduring lineages of compositional thought where broad notions of sound foreground creative works.

Sound is also conceptualized in other ways: in sound studies as “vibration that is perceived and becomes known through its materiality;”<sup>6</sup> in ethnomusicology as a way of knowing or acoustemology;<sup>7</sup> and in musicology as “acoustical energy” that can function as “a medium in which the social differences of experienced contact play out in the sensing bodies of the social actors involved.”<sup>8</sup> It is also theorized as embodied experience, metaphor, and construct; and as noun, adjective, and verb.<sup>9</sup> Such views indicate a trend in which Western assumptions regarding sound and listening are

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<sup>3</sup> Salomé Voegelin, *Sonic Possible Worlds: Hearing the Continuum of Sound* (New York, NY: Bloomsbury Academic, 2014), 121.

<sup>4</sup> James A. Steintrager and Rey Chow, eds., *Sound Objects* (Durham, NC: Duke University Press, 2018), 8.

<sup>5</sup> R. Murray Schafer, *The Tuning of the World* (New York, NY: Alfred A. Knopf, 1977), 5. Original contains italics.

<sup>6</sup> David Novak and Matt Sakakeeny, eds., *Keywords in Sound* (Durham, NC: Duke University Press, 2015), 1.

<sup>7</sup> Steven Feld, “Acoustemology,” in *Keywords in Sound*, ed. David Novak and Matt Sakakeeny (Durham, NC: Duke University Press, 2015), 12. See also Steven Feld, *Acoustemology: Four Lectures*, 2024, <https://www.stevenfeld.net/acoustemology-four-lectures>.

<sup>8</sup> Emily Wilbourne and Suzanne G. Cusick, eds., *Acoustemologies in Contact: Sounding Subjects and Modes of Listening in Early Modernity* (Cambridge, ENG: Open Book Publishers, 2021), 8.

<sup>9</sup> For more about sound as material and metaphor, see the introduction to Novak and Sakakeeny, *Keywords in Sound*, 1–2.

increasingly questioned.<sup>10</sup> Sound can also be a way to enrich our experiences.<sup>11</sup> As writer Airek Beauchamp suggests, “we should trust our ears as much as our eyes, justifying our trust in sound, and of the resonating body.”<sup>12</sup> Knowing through the body and characterizing sound as relational, “We vibrate sympathetically with other entities in our environments, as they do with us. It is our own sympathetic vibrations ... that we describe as sound.”<sup>13</sup>

Listening has also been understood in manifold ways, with the act of listening reliant on context. Listening and hearing, although different, are closely intertwined in their *Oxford English Dictionary* entries. “Hear” is defined as “To perceive, or have the sensation of, sound,” “To exercise the auditory function intentionally,” and “To listen to (a person or thing) with more or less attention or understanding.”<sup>14</sup> “Listen,” likewise, is “To hear attentively; to give ear to; to pay attention to (a person speaking or what is said)” or “To give attention with the ear to some sound or utterance; to make an effort to hear something; to ‘give ear’.”<sup>15</sup> The difference between these definitions of hearing and

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<sup>10</sup> Novak and Sakakeeny, *Keywords in Sound*, 7–8.

<sup>11</sup> Don Ihde, “In Praise of Sound,” in *Listening and Voice: Phenomenologies of Sound*, 2nd ed. (Albany, NY: State University of New York Press, 2007), 3–16.

<sup>12</sup> Airek Beauchamp, “Live Through This: Sonic Affect, Queerness, and the Trembling Body,” *Sounding Out!*, September 14, 2015, <https://soundstudiesblog.com/2015/09/14/sonic-tremblings-sound-affect-queer-body/>.

<sup>13</sup> Suzanne Cusick, “Towards an Acoustemology of Detention in the ‘Global War on Terror’,” in *Music, Sound and Space: Transformations of Public and Private Experience*, ed. Georgina Born (Cambridge, ENG: Cambridge University Press, 2013), 278.

<sup>14</sup> *Oxford English Dictionary*, “hear, v.” 2021, <https://www-oed-com.ezproxy1.lib.asu.edu/view/Entry/85048?result=1&rskey=CWWYZO&>. Here I reference entries 1a, 4a, and 4b.

<sup>15</sup> *Oxford English Dictionary*, “listen, v.” 2021, <https://www-oed-com.ezproxy1.lib.asu.edu/view/Entry/109008?isAdvanced=false&result=2&rskey=3X9hlc&>. Here I reference entries 1a and 2a.

listening is the intention behind engaging with sound. Listening requires more focused attention. For example, “hearing is a physiological process, listening is a psychological act.”<sup>16</sup> Similarly, composer and Deep Listener Pauline Oliveros (1932–2016) distinguishes between hearing and listening: “Prompted by experience and learning, listening takes place voluntarily. Listening is not the same as hearing and hearing is not the same as listening.”<sup>17</sup> However, the two remain entangled, for “[h]earing does not stop so that listening might begin; it is rather coextensive with it.”<sup>18</sup> Such blurring of boundaries speaks to the intricacies of and variety associated with the term “listening.”<sup>19</sup>

Variances in listening perception are the result of different stimuli, contexts, and experiences since “music and listener do not have prearranged, fixed positions in a relationship; rather, they are contingent, negotiated, contested, and subject to political, social, economic, and aesthetic power.”<sup>20</sup> Further, “[l]istening is a practice that cannot be done once and checked off—it is a relationship that needs to be built over time.”<sup>21</sup>

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<sup>16</sup> Roland Barthes, “Listening,” in *The Responsibility of Forms: Critical Essays on Music, Art, and Representation* (New York, NY: Hill and Wang, 1985), 245.

<sup>17</sup> Pauline Oliveros, *Deep Listening: A Composer’s Sound Practice* (New York, NY: iUniverse, 2005), xxi.

<sup>18</sup> Sander van Maas, ed., *Thresholds of Listening: Sound, Technics, Space* (New York, NY: Fordham University Press, 2015), 97.

<sup>19</sup> Tom Rice, “Listening,” in *Keywords in Sound*, ed. David Novak and Matt Sakakeeny (Durham, NC: Duke University Press, 2015), 101.

<sup>20</sup> Marcel Cobussen, “Listening,” in *The Oxford Handbook of Western Music and Philosophy*, ed. Tomás McAuley, Nanette Nielsen, Jerrold Levinson, and Ariana Phillips-Hutton (New York, NY: Oxford University Press, 2021), 489.

<sup>21</sup> Sam Staddon, Anja Byg, Mollie Chapman, Robert Fish, Alice Hague, and Katie Horgan, “The Value of Listening and Listening for Values in Conservation,” *People and Nature* 5 (2023): 348.

Listening is socially and culturally constructed,<sup>22</sup> but “cultures do not share the same methods of listening,” so methods can widely vary.<sup>23</sup> Issues arise when Eurocentric customs are favored and unquestioned because “[t]o privilege European and European-descended acoustical practices is to contribute to the colonial fantasy that European notions of sound, music, and listening are universal, and thus to also contribute passively to ongoing notions of European – white – cultural supremacy.”<sup>24</sup> As Josh Kun, who specializes in communication studies, reminds us, “Music can always sound different from one listening moment to another, and mean radically different things to all who hear it. There is no one, single, all-encompassing way of listening,” and the same individual can use listening to sample different versions of self.<sup>25</sup> Thankfully, scholars “have begun to fully recognize that the execution of our auditory perception is anything but universal.”<sup>26</sup>

Physiologically, during listening, sounds impact the human body and are processed by the brain. When soundwaves enter the ear specifically, the waves vibrate portions of the middle and inner ear — including the cochlea and hair cells<sup>27</sup> — which

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<sup>22</sup> Nina Sun Eidsheim, *The Race of Sound: Listening, Timbre, and Vocality in African American Music* (Durham, NC: Duke University Press, 2019), 18.

<sup>23</sup> Tadahiko Imada, “Acoustic Ecology Considered as a Connotation: Semiotic, Post-Colonial, and Educational Views of Soundscape,” *Soundscape* 6, no. 2 (September 2005): 14.

<sup>24</sup> Wilbourne and Cusick, *Acoustemologies in Contact*, 3.

<sup>25</sup> Josh Kun, *Audiotopia: Music, Race, and America* (Berkeley, CA: University of California Press, 2005), 17; 2.

<sup>26</sup> Lawrence English, “Relational Listening: A Politics of Perception,” *Ear Wave Event 2* (Spring 2015): 2, <http://earwaveevent.org/wp-content/uploads/2015/04/english.pdf>.

<sup>27</sup> Jim Hudspeth, “The Beautiful, Mysterious Science of How You Hear,” TED Talk, November 2019, [https://www.ted.com/talks/jim\\_hudspeth\\_the\\_beautiful\\_mysterious\\_science\\_of\\_how\\_you\\_hear/transcript](https://www.ted.com/talks/jim_hudspeth_the_beautiful_mysterious_science_of_how_you_hear/transcript).

then transmit an electrical signal to the brain through nerves. The brain interprets the signal as sound based on the listener's previous sonic learning experiences. The brain also acts as a sound mixer and may or may not filter out some sounds in order to focus on others. Moreover, the brain connects sounds with memory and bodily sensations and assigns meaning and context to the situation, typically summoning emotions. Existing body and mind knowledge, informed by experiential and cultural backgrounds, makes listening a highly individualized practice. Because listening is subjective, different perceptions of the same sound may simultaneously occur.

As a personal act of perception dependent on one's environment and individual experiences, listening cannot be generalized. Instead, one must understand listening as a plurality. Emphasis on the individual (and subjective) experience propels the concept, which I use as a baseline for this dissertation. Listening also allows humans to relate to other entities and spaces in the past, present, and future. Philosopher Jean-Luc Nancy describes this type of auditory perception as "être à l'écoute," literally meaning "to be in the listening," which Charlotte Mandell translates as "to be listening" or "to be all ears."<sup>28</sup> Being all ears evokes attentive listening and additionally suggests whole-body listening and processing, considering the entire body as receiving ears. This is one of the varied listening types highlighted in this dissertation.

We must also review whose ears and brains are engaged. Often, discourse around sound and listening centers on humans, with little consideration given to the more-than-

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<sup>28</sup> Jean-Luc Nancy, *Listening*, trans. Charlotte Mandell (New York, NY: Fordham University Press, 2007), 4.

human world.<sup>29</sup> However, nonhuman animals, plants, fungi, stones, spirits, and ancestors, for instance, also participate in sounding and listening and can approach listening and sounding individually. Though many of their sounds are not audible to humans without amplification, digital technologies allow humans to connect with them,<sup>30</sup> and their experiences should be considered in order to widen and deepen the scope of sounding and listening. Opening human listening to these entities can form meaningful connections and benefit the well-being of all listeners. Even still, it is essential to acknowledge that theories of listening behaviors in the more-than-human world remain human-centered since our knowledge about their listening is limited.

Keeping all this in mind, in this dissertation I use the term “sound” to encompass music, so-called noise,<sup>31</sup> and all sounds in a space or environment (also called environmental sounds). I frame sound as a means to navigate relationships between entities and spaces. My interest lies in how listeners relate to sounds and how they,

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<sup>29</sup> I use “the more-than-human world” to describe nonhuman nature as in David Abram, *The Spell of the Sensuous: Perception and Language in a More-Than-Human World* (New York, NY: Vintage Books, 1997). Applying “more-than-human” as a qualifier has been adopted by other disciplines such as environmental legal studies. It speaks to relationality and entanglement and seeks to avoid binary separation. See also Jamie Lorimer and Timothy Hodgetts, *More-than-Human* (Oxford, ENG: Routledge, 2024).

<sup>30</sup> Karen Bakker, *The Sounds of Life: How Digital Technology Is Bringing Us Closer to the Worlds of Animals and Plants* (Princeton, NJ: Princeton University Press, 2022), 2. See Bakker’s Chapter 6 “Plant Polyphonies.”

<sup>31</sup> Historically, noise was long separated from music, though composers in the late nineteenth century and through the twentieth century began using non-musical noise more regularly as a musical tool. The term “noise” is subjective and can imply judgment. For more on the concept of noise see Jacques Attali, *Noise: The Political Economy of Music* (Minneapolis, MN: University of Minnesota Press, 1985); Luigi Russolo, *The Art of Noises* (New York, NY: Pendragon Press, 1986); Douglas Kahn, *Noise Water Meat* (Cambridge, MA: MIT Press, 1999); Paul Hegarty, *Noise/Music: A History* (New York, NY: Continuum, 2007); Hillel Schwartz, *Making Noise: From Babel to the Big Bang & Beyond* (New York, NY: Zone, 2011); Greg Hainge, *Noise Matters: Towards an Ontology of Noise* (New York, NY: Bloomsbury Academic, 2013); David Hendy, *Noise: A Human History of Sound and Listening* (New York, NY: Ecco, 2013).

through those relationships, construct and interpret their sonic experiences. This aligns with Garth Paine and Celia Yang's explanation of environmental listening as "a practice of directing your attention to the acoustic ecology and more deeply connecting with the living ecology and the sonic sources that make up that symphony of sound."<sup>32</sup> I focus on Deep Listening, as developed by Oliveros and collaborators Ione and Heloise Gold, as a practice of expansive listening allowing for inclusivity.

Oliveros once defined the practice of Deep Listening as "listen[ing] to everything all the time and remind[ing] yourself when you are not listening."<sup>33</sup> This is a common description and current understanding of the practice. Through continuous listening and sounding, the Deep Listening practice employs new power dynamics, revealing relationships between participants and inner and outer environments. I argue that this practice and related approaches by current artists extend the scope of listening in artistic contexts to intentionally include the more-than-human world. I build on a growing body of scholarship from different disciplines addressing sound and listening as complex and relational, which will be addressed in the following literature review.

## **Literature Review**

To grasp the complexity of this topic, I engage with a broad and diverse body of research, tying together strands from various fields to showcase a web of connections.

This extensive literature review serves as an anchor point for understanding concepts of

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<sup>32</sup> Garth Paine and Celia Yang, *The Environmental Listening Field Guide* (Tempe, AZ: Arizona State University, Tempe, 2024), 15. Thank you to Dr. Paine and Dr. Feisst for sharing this with me.

<sup>33</sup> Pauline Oliveros, *Deep Listening: A Workshop Manual* (Kingston, NY: Deep Listening Publications, 1998), 2.

sound and listening specifically as related to environmental awareness. Scholarly work regarding the phenomenon of sound and practices of listening has grown from new compositional directions, performance practices, and ideas about perception first explored in the twentieth century. The number of publications has substantially increased in the last twenty years, and thorough, wide-ranging research on sound and listening has been carried out in the areas of electroacoustic and experimental music, acoustic ecology, ethnomusicological fieldwork, sound studies, and ecomusicology, especially within the last ten years. These fields have substantially broadened awareness of sonic environments beyond narrow definitions of music.

In this literature review, I first survey writings on sound and ways of listening, highlighting foundational artists and thinkers who provide important context for my work. Due to the plethora of sources in these areas, I focus on milestone publications, chosen for their impact on composition, performance, listening, and scholarship. After this survey, I examine literature addressing a range of aspects important for their role in Deep Listening and serving as frameworks for my own listening experiences and the case studies: listening as relational, listening as multi-sensory, listening as determined by the individual, and including more-than-human listeners. The literature review concludes with an overview of the work by prominent Deep Listening scholars and practitioners before covering scholarship on selected artists whose creativity is rooted in or separate from Deep Listening practices. Throughout, I include sources by and about artists to provide a well-rounded foundation for my investigations in the latter part of the dissertation.

## Sound and Ways of Listening

Listening has received uneven coverage in music scholarship. Entries on listening are missing in major music dictionaries, encyclopedias, and research databases such as *Grove Music Online*, *MGG Online*, and *Oxford Bibliographies*. Closely related entries include “hearing and psychoacoustics,” and “Gehör” [hearing].<sup>34</sup> The *Grove* entry on hearing and psychoacoustics focuses on the physics and human anatomy of hearing. While the subjectivity of loudness is raised in the article, the discussion of auditory perception in the brain does not extend past pitch. In *MGG Online*’s “Gehör” entry, hearing from an anatomical and physiological perspective is similarly explained while also addressing the individual’s role in hearing informed by both biology and culture, with listening as orientation in a social or physical environment. Strikingly, the authors of this entry mention bats, primates, rats, and songbirds in addition to humans in reference to auditory cortex neurons and perfect pitch, and therefore recognize hearing and listening in the more-than-human world. However, the general lack of coverage in these references underscores the need for my dissertation work, which aims to address such underexplored aspects, particularly as they intersect with technological changes.

Innovations in recording and playback technology from the nineteenth and early twentieth centuries shaped notions of sound, its production, its use in composition, and listening practices.<sup>35</sup> Pierre Schaeffer’s 1952 text *In Search of a Concrete Music (A la*

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<sup>34</sup> *Oxford Music Online*, “hearing and psychoacoustics,” by Brian C.J. Moore, 2001, <https://doi-org.ezproxy1.lib.asu.edu/10.1093/gmo/9781561592630.article.42531>; *MGG Online*, “Gehör,” by Karl-Heinz Plattig, Horst-Peter Hesse, Eckart Altenmüller, Herbert Bruhn, Helmut Rösing, and Ulrich Kaiser, 2017, <https://www-mgg-online-com.ezproxy1.lib.asu.edu/mgg/stable/12232>. There is a separate entry for “Musikpsychologie” [music psychology] in *MGG Online*, referenced in the “Gehör” entry.

<sup>35</sup> See Christoph Cox and Daniel Warner, eds., *Audio Culture: Readings in Modern Music* (New York, NY: Continuum, 2004).

*recherche d'une musique concrète*) is significant for reimagining sound as a manipulable object independent of notation, and his writings about the method also establish listening modes.<sup>36</sup> The notion of acousmatic listening through loudspeakers, as demonstrated in Schaeffer's highly influential 1966 *Treatise on Musical Objects (Traité des objets musicaux)*, is foundational for understanding later loudspeaker music and contributes to listener-oriented theories, crucial for my discussion of Oliveros and analysis of pieces.<sup>37</sup> Though Schaeffer's writings on sound objects inspired other artists and scholars to adopt, adapt, and further theorize conceptions of sound and listening practices, his work does not fully address the embodied practitioner experience. To this end, I contribute a nuanced discussion of artists who recognize their own relational connection with sound production and listening.

Schaeffer's colleague Luc Ferrari, in contrast, shifted the sound object concept to value environmental sound for its societal contexts. In insightful interviews, including "I Was Running in So Many Different Directions" (1996), "Luc Ferrari: Interview with an Intimate Iconoclast" (1998), and *Almost Nothing with Luc Ferrari: Interviews* (2012),

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<sup>36</sup> Pierre Schaeffer, *In Search of a Concrete Music*, trans. Christine North and John Dack (Berkeley, CA: University of California Press, 2012). Original Pierre Schaeffer, *A la recherche d'une musique concrète* (Paris, FRA: Editions du Seuil, 1952). Brian Kane, "The Fluctuating Sound Object," in *Sound Objects*, ed. James A. Steintrager and Rey Chow (Durham, NC: Duke University Press, 2018), 53–70. Here Kane also discusses how Schaeffer's understanding of the sound object and sound fragment evolved over time. See also Brian Kane, "L'Objet Sonore Maintenant: Pierre Schaeffer, Sound Objects and the Phenomenological Reduction," *Organised Sound* 12, no. 1 (2007): 15–24; Brian Kane, *Sound Unseen: Acousmatic Sound in Theory and Practice* (New York, NY: Oxford University Press, 2014); Suk-Jun Kim, "A Critique on Pierre Schaeffer's Phenomenological Approaches: Based on the Acousmatic and Reduced Listening," paper presented at Pierre Schaeffer Conference: mediART, Rijeka, Croatia, October 7, 2010, [http://reddoorsound.com/files/PS\\_Phenomenology\\_KIM.pdf](http://reddoorsound.com/files/PS_Phenomenology_KIM.pdf); Mitchell Hermann, "Unsound Phenomenologies: Harrison, Schaeffer and the Sound Object," *Organised Sound* 20 (2015): 300–307.

<sup>37</sup> Pierre Schaeffer, *Treatise on Musical Objects: An Essay across Disciplines*, trans. Christine North and John Dack (Berkeley, CA: University of California Press, 2017). Original Pierre Schaeffer, *Traité des objets musicaux: Essai interdisciplines* (Paris, FRA: Editions du Seuil, 1966).

Ferrari recognizes creativity in the recording rather than manipulation process and reveals that recording everyday sounds helped him listen to the acoustic ecology of his environment.<sup>38</sup> Although he does not use the terms “acoustic ecology” or “soundscape” in reference to his own work (instead preferring the concept of “anecdotal music”<sup>39</sup>), scholars Eric Drott and Sabine Feisst show in their publications how Ferrari’s philosophy and compositions – including his path-breaking *Presque rien No. 1* and *Allô, ici la terre* – are examples of ecocritical soundscape compositions that paved the way for acoustic ecology.<sup>40</sup> I explore how Oliveros and other artists similarly learn from the daily sounds in their surroundings. Missing in Ferrari’s work is a richer understanding of the more-than-human world outside of extractive human use, a gap I address in the case studies through consideration of dynamic sonic connections and sustainable practices.

Building on Ferrari and Schaeffer’s work, Canadian composer and writer

R. Murray Schafer advanced the use of field recordings in his large-scale soundscape

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<sup>38</sup> Luc Ferrari, “I Was Running in So Many Different Directions,” trans. Alexandra Boyle, *Contemporary Music Review* 15, no. 1 (1996): 95–102; Brigitte Robindoré and Luc Ferrari, “Luc Ferrari: Interview with an Intimate Iconoclast,” *Computer Music Journal* 22, no. 3 (Autumn 1998): 8–16; Jacqueline Caux and Luc Ferrari, *Almost Nothing with Luc Ferrari: Interviews* (Los Angeles, CA: Errant Bodies Press, 2012).

<sup>39</sup> Caux, introduction to *Almost Nothing with Luc Ferrari: Interviews*, 9.

<sup>40</sup> *Presque rien No. 1, le lever du jour au bord de la mer (Almost Nothing No. 1, Daybreak at the Seashore)* (1967–70) was made from recordings of daily life on the island of Korčula and *Allô, ici la terre* (1973–1974) from recordings of environmental destruction. Eric Drott, “The Politics of *Presque rien*,” in *Sound Commitments: Avant-Garde Music and Sixties*, ed. Robert Adlington (New York, NY: Oxford University Press, 2009), 145; Sabine Feisst, “Allô, ici la terre: Agency in Ecological Music Composition, Performance, and Listening,” in *On Active Grounds: Agency and Time in the Environmental Humanities*, ed. Robert Boschman and Mario Trono (Waterloo, CAN: Wilfrid Laurier University Press, 2019), 87–106. See also Eric Drott, “The Peasant’s Voice and the Tourist’s Gaze: Listening to Landscape in Luc Ferrari’s *Petite symphonie intuitive pour un paysage de printemps*,” in *Current Directions in Ecomusicology: Music, Culture, Nature*, ed. Aaron S. Allen and Kevin Dawe (New York, NY: Routledge, 2016), 233–244; Eric Drott, “‘Poor Man’s *Musique Concrète*’: Luc Ferrari’s Tape Music After 1968,” in *1968: Musik und Gesellschaftlicher Protest*, ed. Beate Kutschke and Arnold Jacobshagen (Stuttgart: Franz Steiner Verlag, 2007), 92–93.

projects, considered the relationship of sounds in outdoor and indoor environments, and garnered attention as an innovator of acoustic ecology. His 1977 book *The Tuning of the World* stands as a highly influential introduction to this interdisciplinary field, establishing, among other things, terminology for the analysis of sonic environments.<sup>41</sup> His numerous writings and “ear cleaning” exercises have become foundational for acoustic ecology pedagogy and thus provide a comparison for me to consider the Deep Listening approach to environmental listening.<sup>42</sup> Additionally, Barry Truax’s seminal *Handbook for Acoustic Ecology* (1978) and *Acoustic Communication* (2001) offer important practitioner conceptions of acoustic ecology.<sup>43</sup> To counter the purely Western focus in such integral works by Truax and Schafer, I turn to Indigenous perspectives to inform my analyses of environmental pieces.

Literature in acoustic ecology from across the globe challenges and extends Schafer’s ideas. For example, Garth Paine’s article “Acoustic Ecology 2.0” (2017) and *The Environmental Listening Field Guide* with Celia Yang (2024), Robin Parmar’s work on living and sounding the Anthropocene (2019), and Milena Droumeva and Randolph Jordan’s edited volume *Sound, Media, Ecology* (2019) all contemporize acoustic ecology to connect with a wide variety of ecological philosophies and the rapidly expanding field

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<sup>41</sup> Schafer, *The Tuning of the World*. See also Kendall Wrightson, “An Introduction to Acoustic Ecology,” *Soundscape* 1, no. 1 (Spring 2000): 10–13.

<sup>42</sup> Schafer, *The Tuning of the World*; R. Murray Schafer, *Ear Cleaning: Notes for an Experimental Music Course* (Toronto, CAN: Clark and Cruickshank, 1967). Frank Dufour reviews the connections between Schaeffer and Schafer’s concepts to argue that listening is the basis for both practices. See Frank Dufour, “Musique Concrète as One of the Preliminary Steps to Acoustic Ecology,” *Soundscape* 8, no. 1 (September 2008): 17–19.

<sup>43</sup> Barry Truax, *Acoustic Communication*, 2nd ed. (Westport, CT: Albex, 2001). See also Barry Truax, ed., *Handbook for Acoustic Ecology* (Vancouver, CAN: ARC Publications, 1978).

of sound studies.<sup>44</sup> These texts evince how artists and scholars in acoustic ecology consider relationships with and in sound in a manner often attributed to sound studies (to be discussed later). This context frames my approach as I present the environmental bases for Deep Listening.

Soundwalks are another part of acoustic ecology I draw on, with a fast-growing body of literature since the late twentieth century. Hildegard Westerkamp's 1974 essay "Soundwalking" outlines the practice's history and remains foundational for understanding its development.<sup>45</sup> Other crucial studies expand on Westerkamp's work, such as David Paquette and Andra McCartney's 2012 article "Soundwalking and the Bodily Exploration of Places" and McCartney's entry in the *The Oxford Handbook of Mobile Music Studies* (2014), which position soundwalks and related variations as "exercises of awareness" for research and performance.<sup>46</sup> Scholarship like Megan Murph's 2018 dissertation "Max Neuhaus, R. Murray Schafer, and the Challenges of

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<sup>44</sup> Garth Paine, "Acoustic Ecology 2.0," *Contemporary Music Review* 36, no. 3 (2017): 171–181; Paine and Yang, *The Environmental Listening Field Guide*; Robin Parmar, "Sounding the Anthropocene: Rethinking Soundscapes and Nature," augmented version of a talk presented at HearSay in Kilfinane, County Limerick, Ireland, April 4-7, 2019, [https://www.academia.edu/38751566/Sounding\\_the\\_Anthropocene\\_Rethinking\\_soundscapes\\_and\\_nature](https://www.academia.edu/38751566/Sounding_the_Anthropocene_Rethinking_soundscapes_and_nature); Milena Droumeva and Randolph Jordan, eds., *Sound, Media, Ecology* (New York, NY: Palgrave MacMillan, 2019).

<sup>45</sup> Hildegard Westerkamp, "Soundwalking," Hildegard Westerkamp: Inside the Soundscape, January 1, 2001, [https://web.archive.org/web/20210413135125/https://www.hildegardwesterkamp.ca/writings/writingsby/?post\\_id=13&title=soundwalking](https://web.archive.org/web/20210413135125/https://www.hildegardwesterkamp.ca/writings/writingsby/?post_id=13&title=soundwalking); originally published in *Sound Heritage* 3, no. 4 (Victoria, BC, 1974).

<sup>46</sup> David Paquette and Andra McCartney, "Soundwalking and the Bodily Exploration of Places," *Canadian Journal of Communication* 37, no. 1 (2012): 135–45; Andra McCartney, "Soundwalking: Creating Moving Environmental Sound Narratives," in *The Oxford Handbook of Mobile Music Studies*, ed. Sumanth S. Gopinath and Jason Stanyek (New York, NY: Oxford University Press, 2014), 2:212–237. See also John Levack Drever, "Soundwalking: Aural Excursions into the Everyday," in *The Ashgate Research Companion to Experimental Music*, ed. James Saunders (Farnham, ENG: Ashgate Publishing, 2009), 163–192. For a general history of walking, see Rebecca Solnit, *Wanderlust: A History of Walking* (New York, NY: Viking, 2001).

Noise” and Christos Carras’s 2019 article “Soundwalks: An Experiential Path to New Sonic Art” represent similar trends discussing soundwalks as an embodied way to experience sounds, relate to space, participate in art, and reframe relationships in broader contexts.<sup>47</sup> Andrea Williams’s research on listening to environments with participatory walks also informs my work, namely a chapter in her dissertation “Soundwalking: Creating Stewardship for Local Waterways” (2018) about the history of soundwalks in relation to acoustic ecology, the influence of various technologies, and twentieth- to twenty-first-century sonic artists like Oliveros.<sup>48</sup> Contributors for the collection *Soundwalking: Through Time, Space, and Technologies* (2023) further offer helpful insights about soundwalks as connected to race, privilege, safety, wilding, and encountering, among other topics.<sup>49</sup> Literature about such embodied approaches is important in the context of my dissertation, especially regarding multi-sensory experiences. The different ways artists use soundwalks – as artistic practice, for pedagogical purposes, as research, with sonic interventions, for recordings, etc. – helps me situate other mobile listening practices, especially those used in the case studies.

Writings about acousmatic and electroacoustic music, along with acoustic ecology research, are part of the vast and varied experimental music traditions featuring composers who blurred and redefined existing roles of music, performers, audiences, and

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<sup>47</sup> Megan Elizabeth Murph, “Max Neuhaus, R. Murray Schafer, and the Challenges of Noise” (PhD diss., University of Kentucky, 2018), ProQuest (10954432); Christos Carras, “Soundwalks: An Experiential Path to New Sonic Art,” *Organised Sound* 24, no. 3 (2019): 261–273.

<sup>48</sup> Andrea Williams, “Soundwalking: Creating Stewardship for Local Waterways” (PhD diss., Rensselaer Polytechnic Institute, 2018), ProQuest (10843449).

<sup>49</sup> Jacek Smolicki, ed., *Soundwalking: Through Time, Space, and Technologies* (New York, NY: Routledge, 2023).

listening. For example, John Cage, pioneer of indeterminate music and graph and verbal notation, proponent of environmental listening, and composer of the famous “silent” piece *4’33”* (1952), published prolifically on sound, “silence,” and listening in influential writings and interviews such as *Silence: Lectures and Writings* (1961), *A Year from Monday: New Lectures and Writings* (1967), and *Empty Words: Writings ‘73–‘78* (1979).<sup>50</sup> His commentary on ways to listen inspired many other experimental artists, including Oliveros, and his work remains influential today for growing awareness of sounds, as Deep Listening also does.

As a composer interested in acoustic phenomena and auditory perception, Alvin Lucier developed sound installations and pieces often focused on the sounds of place. In interviews and writings compiled in *Chambers: Scores by Alvin Lucier* (1980) and *Reflections: Interviews, Scores, Writings* (1995), Lucier provides explanations of his compositional processes and a profound understanding of sound and listening as physical phenomena, significant for me when exploring Deep Listening work in various resonant spaces and bodies.<sup>51</sup> Similarly interested in sound as a dynamic phenomenon was Maryanne Amacher, remembered for her unusual site-specific installations which reveal an extensive knowledge of psychoacoustics and meticulous attention to sonic detail. The volume *Maryanne Amacher: Selected Writings and Interviews* (2020) includes notes

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<sup>50</sup> John Cage, *Silence: Lectures and Writings* (Middletown, CT: Wesleyan University Press, 1961); John Cage, *A Year from Monday: New Lectures and Writings* (Middletown, CT: Wesleyan University Press, 1967); John Cage, *Empty Words: Writings ‘73–‘78* (Middletown, CT: Wesleyan University Press, 1979). See also John Cage, *M: Writings ‘67–‘72* (Middletown, CT: Wesleyan University Press, 1974) and John Cage, *X: Writings ‘79–‘82* (Middletown, CT: Wesleyan University Press, 1983).

<sup>51</sup> Alvin Lucier and Douglas Simon, *Chambers: Scores by Alvin Lucier* (Middletown, CT: Wesleyan University Press, 1980); Alvin Lucier, *Reflections: Interviews, Scores, Writings/Reflexionen: Interviews, Notationen, Texte* (Köhl, DEU: MusikTexte, 1995). Pauline Oliveros wrote one of the prefaces to *Reflections*.

about her listening theories, ideas on psychoacoustics and sound, and artistic activities.<sup>52</sup> Writings by these experimental composers help me situate not only Oliveros's ideas but also other artists' contemplations on sound, space, and the listener when commentary about their own works is not available or as detailed.

Since the 1960s, scholars have frequently discussed trends in experimental music and addressed the role of sound and listening in this context. In his widely-read book *Experimental Music: Cage and Beyond* (1974), composer, editor, and critic Michael Nyman focuses on experimental artists and their processes in the United States and England from 1950 to 1970.<sup>53</sup> With significant mention of Cage, Cornelius Cardew, Steve Reich, Christian Wolff, and Young, among others, Nyman addresses how composers engaged with and experienced sound (for example, as the result of an action or process). However, female artists such as Oliveros are largely absent from the main body of text. Though Nyman does not offer extensive consideration of sound and listening, the section "Towards (a definition of) experimental music" includes thoughts on auditory perception following Cage's ideas in placing responsibility with the listener, which is a key theme in my dissertation.

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<sup>52</sup> Maryanne Amacher, *Maryanne Amacher: Selected Writings and Interviews*, ed. Amy Cimini and Bill Dietz (Brooklyn, NY: Blank Forms Editions, 2020). I additionally consulted Maryanne Amacher and Alvin Lucier, "Maryanne Amacher," in *Eight Lectures on Experimental Music*, ed. Alvin Lucier (Middletown, CT: Wesleyan University Press, 2018), 45–58. See also Chimini's discussion of Amacher's unpublished materials in Amy Cimini, "Telematic Tape: Notes on Maryanne Amacher's City-Links (1967–1980)," *Twentieth-Century Music* 14, no. 1 (2017): 93–108; Amy Cimini, "In Your Head: Notes on Maryanne Amacher's Intelligent Life," *The Opera Quarterly* 33, no. 3–4 (2017): 269–302.

<sup>53</sup> Michael Nyman, *Experimental Music: Cage and Beyond* (New York, NY: Schirmer, 1974). See also David Nicholls, *American Experimental Music, 1890–1940* (Cambridge, ENG: Cambridge University Press, 1990), which focuses on such composers as Charles Ives and Henry Cowell.

Musicologist Benjamin Piekut builds on Nyman by centering on Cage's influence in his 2011 volume *Experimentalism Otherwise: The New York Avant-Garde and Its Limits*, though he rarely addresses concepts of sound and listening, which I do in Chapter 2.<sup>54</sup> Helpful for my work is Piekut's definition of experimentalism as "where the everyday and the otherwise converge in an arena of grounded possibility."<sup>55</sup> Similar to Piekut, composer-scholar Jennie Gottschalk positions her 2016 book *Experimental Music Since 1970* as a sequel to Nyman.<sup>56</sup> She covers a broad albeit necessarily shallow overview of later experimental artists, including Oliveros, Amacher, David Dunn, Jana Winderen, and many others in chapters on "Perception" and "Information, Language, and Interaction," which inform my own interest in these topics. Gottschalk often centers on the listening experience as shaping artists' works, and she applies this same approach in describing her experience of their music. While Piekut and Gottschalk incorporate more gender and geographical diversity than Nyman, a gap in representation remains. I attend to this in part by examining similar representational gaps in the larger Deep Listening community. Experimental musician and musicologist George Lewis speaks to the erasure of African Americans in histories of experimentalism in his 2007 book *Power Stronger Than Itself: The AACM and American Experimental Music*, for which he conducted over

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<sup>54</sup> Benjamin Piekut, *Experimentalism Otherwise: The New York Avant-Garde and Its Limits* (Berkeley, CA: University of California Press, 2011).

<sup>55</sup> Piekut, *Experimentalism Otherwise*, 27.

<sup>56</sup> Jennie Gottschalk, *Experimental Music Since 1970* (New York, NY: Bloomsbury Academic, 2016).

ninety interviews of supporters and members of the AACM.<sup>57</sup> Throughout his extensive book, Lewis features many artists who reference listening as an active practice for learning and tracing musical influence, which can also be found in *Deep Listening*.

*The Ashgate Research Companion to Experimental Music* (2009) edited by James Saunders covers a wide range of experimental music topics including the use of environmental sound. Will Montgomery's chapter in the volume, "Beyond the Soundscape: Art and Nature in Contemporary Phonography," focuses on compositional applications of field recordings, pulling acoustic ecology into the experimental music discussion, an important aspect of my dissertation research.<sup>58</sup> Similarly, Joanna Demers comments on environmental sound, experimental music, soundscape composition, and sound art in her 2010 book *Listening through the Noise: The Aesthetics of Experimental Electronic Music*.<sup>59</sup> The first chapter about post-Schaefferian electroacoustic sound as sign and the fifth chapter about sound's connection with space, place, location, and site through soundscape compositions, field recordings, and sound art are especially relevant to my dissertation. I will show how Demers's assertions that sound "can create space" and that "such a space is not merely physical but also psychological, drawing on memory and nostalgia as much as bodily sensation" are also found in the *Deep Listening* practice,

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<sup>57</sup> George Lewis, *Power Stronger Than Itself: The AACM and American Experimental Music* (Chicago, IL: University of Chicago Press, 2008). AACM is an abbreviation for Association for the Advancement of Creative Musicians.

<sup>58</sup> Will Montgomery, "Beyond the Soundscape: Art and Nature in Contemporary Phonography," in *The Ashgate Research Companion to Experimental Music*, ed. James Saunders (Farnham, ENG: Ashgate Publishing, 2009).

<sup>59</sup> Joanna Demers, *Listening through the Noise: The Aesthetics of Experimental Electronic Music* (New York, NY: Oxford University Press, 2010).

specifically through the Deep Listening Band performing in resonant spaces.<sup>60</sup> Another important source for my research is sound and media scholar Douglas Kahn's 2013 book *Earth Sound Earth Signal: Energies and Earth Magnitude in the Arts*. Kahn advances a connection between energy of the natural world and media technology, and I found Chapter 13 insightful for its coverage of Oliveros's concepts of "quantum listening" and "sonosphere," further discussed in Chapters 2 and 3 of this dissertation.<sup>61</sup> These sources, among others, draw together experimental artists and their involvement with environmental sound, exploring new ways of listening and influencing sound studies, as I also do.

Scholars in the quickly expanding field of sound studies examine and refine the existing definitions, meanings, and associations of sound across disciplines and in interdisciplinary cultural, scientific, and musical contexts. Seminal writings like philosopher Theodor W. Adorno's *Essays on Music* (1930–1969), acoustic ecologist Schafer's *The Tuning of the World* (1977), and economic theorist Jacques Attali's *Noise: The Political Economy of Music* (1985)<sup>62</sup> queried sound and listening before sound studies solidified as a popular field of study in the early 2000s when there was a focus on technology, science, and media studies.<sup>63</sup> Scholar Jonathan Sterne's important *The*

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<sup>60</sup> Demers, *Listening through the Noise*, 119.

<sup>61</sup> Douglas Kahn, *Earth Sound Earth Signal: Energies and Earth Magnitude in the Arts* (Berkeley, CA: University of California Press, 2013). Oliveros is mentioned throughout the book, for example in collaboration with Lucier attempting a live performance with sferics (sferics is short for "atmospherics," referring to signals produced by lightning and detectable through radio).

<sup>62</sup> Theodor Adorno, *Essays on Music*, ed. Richard D. Leppert, trans. Susan H. Gillespie (Berkeley, CA: University of California Press, 2002), original essays written 1930s–1960s; Schafer, *The Tuning of the World*; Attali, *Noise*.

<sup>63</sup> Emily Thompson, *The Soundscape of Modernity: Architectural Acoustics and the Culture of Listening in Amer-i-ca, 1900–1933* (Cambridge, MA: MIT Press, 2002); Michael Bull, *Sound Moves: iPod*

*Audible Past: Cultural Origins of Sound Reproduction* (2003) reports on the impact of sound-reproduction technologies in cultures of listening, providing context for my discussion of artists' theories of sound and listening as tied to technologies and culture.<sup>64</sup> This followed Jonathan Kramer's article "New Temporalities in Music" (1981), which suggests that the manipulation of sound on tape especially impacted conceptions of temporality in music.<sup>65</sup> Additionally, humanities scholars Kara Keeling and Josh Kun describe the state of research on sound as it intersects with critical American studies in their book *Sound Clash: Listening to American Studies* (2012), which helps inform Oliveros's American identity.<sup>66</sup> More broadly, *The Sound Studies Reader* (2012) edited by Sterne, is a useful source for my dissertation in recognizing and embracing a wide range of approaches to sound studies and including sections on listening, acoustic spaces, and sonic art.<sup>67</sup>

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*Culture and Urban Experience* (New York, NY: Routledge, 2007); Karin Bijsterveld, *Mechanical Sound: Technology, Culture, and Public Problems of Noise in the Twentieth Century* (Cambridge, MA: MIT Press, 2008).

<sup>64</sup> Jonathan Sterne, *The Audible Past: Cultural Origins of Sound Reproduction* (Durham, NC: Duke University Press, 2003).

<sup>65</sup> Jonathan D. Kramer, "New Temporalities in Music," *Critical Inquiry* 7, no. 3 (1981): 543. See also Kyle Bates, "Three Engrams: Human and Mechanical Memory: Temporality in Experimental Electronic Composition" (MFA thesis, Mills College, 2021), ProQuest (28539974) where Bates writes about remembering through recording media and contends that memory and temporality were explicit in Oliveros's work.

<sup>66</sup> Kara Keeling and Josh Kun, eds., *Sound Clash: Listening to American Studies* (Baltimore, MD: Johns Hopkins University Press, 2012). For more on American sound studies, see Susan Douglas, *Listening In: Radio and the American Imagination* (Minneapolis, MN: University of Minnesota Press, 2004); William H. Kenney, *Recorded Music in American Life: The Phonograph and Popular Memory, 1890–1945* (New York, NY: Oxford University Press, 2004); Mark M. Smith, *Listening to Nineteenth-Century America* (Chapel Hill, NC: University of North Carolina Press, 2002).

<sup>67</sup> Jonathan Sterne, ed., *The Sound Studies Reader* (New York, NY: Routledge, 2012). For additional theorization on sound, see Peter Szendy, *Listen: A History of Our Ears* (New York, NY: Fordham University Press, 2008); Veit Erlmann, *Reason and Resonance: A History of Modern Aurality* (New York, NY: Zone, 2010); van Maas, *Thresholds of Listening*.

Sound studies scholars continue to encompass a variety of subfields in music, acoustics, history, anthropology, geography, disability, gender, and race. However, in the 2015 article “On Whiteness and Sound Studies,” Gustavus Stadler contends that the assumption of whiteness in sound studies needs further addressing.<sup>68</sup> Taking this point, in *Remapping Sound Studies*, editors Gavin Steingo and Jim Sykes expand the European and North American focus in sound studies to theorize sound in and from the Global South.<sup>69</sup> In their introduction, they state, “it would be a mistake to fold sound studies into any cultural or ethnographic project that focuses exclusively on human perceptions, experiences, concepts, or sensations.”<sup>70</sup> To this end, I also consider the more-than-human world and Steven Feld’s petition for increased “sound relationality studies” or “sound companion species studies,” since “studying dynamic interactions of species and materials in all places and times are equally important and should be equally valued.”<sup>71</sup>

Similarly, in *The Oxford Handbook of Sound Studies* (2011), sociologist Trevor Pinch and historian Karin Bijsterveld inquire as to “why listening has nonetheless remained contested and still lacks the same legitimization given to other means of knowing.”<sup>72</sup> In this dissertation, I offer multiple examples of listening as a valid form of

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<sup>68</sup> Gustavus Stadler, “On Whiteness and Sound Studies,” *Sounding Out!*, July 6, 2015, <https://soundstudiesblog.com/2015/07/06/on-whiteness-and-sound-studies/>.

<sup>69</sup> Gavin Steingo and Jim Sykes, eds., *Remapping Sound Studies* (Durham, NC: Duke University Press, 2019).

<sup>70</sup> Steingo and Sykes, *Remapping Sound Studies*, 18.

<sup>71</sup> Steven Feld, “I Hate ‘Sound Studies,’” 2015, <https://static1.squarespace.com/static/545aad98e4b0f1f9150ad5c3/t/55ef81ffe4b0e4ff182017bf/1441759743397/I+Hate.pdf>.

<sup>72</sup> Trevor Pinch and Karin Bijsterveld, eds., *The Oxford Handbook of Sound Studies* (New York, NY: Oxford University Press, 2011), 12.

knowledge. Furthermore, handbook chapters by anthropologist Stefan Helmreich on transduction in underwater sound and by technology scholar Joeri Bruyninckx on mediated bird songs inform my consideration of listening to both experimental music and the more-than-human world. Likewise, sound scholar Holger Schulze's writings, including *The Sonic Persona: An Anthropology of Sound* (2018), are relevant to my dissertation for reevaluating the role of "the human" in sound technology production.<sup>73</sup> In a 2021 interview, Schulze offers a contemporary definition of sound as situated in physical spaces, bodies, and meaning, which is important for my consideration of environmental sound and embodied experiences.<sup>74</sup> Also important for an ecological view of listening and sound studies is *Sounds, Ecologies, Musics* (2023) where the authors present varied applications of relationships and ways of engaging with sound.<sup>75</sup>

While I center on Deep Listening in this dissertation, many ways to listen have been posited and the coverage of listening in music publications has increased in recent years. The scholars in *Thresholds of Listening: Sound, Technics, Space* (2015), edited by musicologist and cultural theorist Sander Van Maas, trace changes in conceptions of listening and its thresholds (limits or turning points) in music, media, technology, literature, and philosophy; the introduction and first three chapters are particularly applicable to my research due to the emphasis on phenomenology and listener

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<sup>73</sup> Holger Schulze, *The Sonic Persona: An Anthropology of Sound* (New York, NY: Bloomsbury Academic, 2018).

<sup>74</sup> Ania Mauruschat, "Situational Sounds and Decolonial Perspectives: A Conversation with Holger Schulze," *Auditory Media Cultures*, December 21, 2021, <https://www.auditive-medienkulturen.de/2021/12/21/situative-klaenge-und-dekoloniale-perspektiven-ein-gespraech-mit-holger-schulze/>.

<sup>75</sup> Aaron S. Allen and Jeff Todd Titon, eds., *Sounds, Ecologies, Musics* (New York, NY: Oxford University Press, 2023).

subjectivity.<sup>76</sup> Similarly, the authors in *Musical Listening in the Age of Technological Reproduction* (2015), edited by Gianmario Borio, study the impact of sound technology on listening, with chapters by Steven Feld on collaborative recordings and Martin Laliberté on Schaeffer's ties to visual practices.<sup>77</sup> These inform my work as well, especially in considering the role of audio technology for expansive listening.

Jean-Luc Nancy's *Listening* (translated by Charlotte Mandell, 2007) is impactful as a philosophical text on the relationships between sound, listening (notably musical listening), and meaning.<sup>78</sup> Nancy distinguishes between hearing, speech listening, musical listening, and musicological listening, and he ultimately focuses on sound itself. His assertion that there is hidden meaning in sounds implies that the listener determines the secret or meaning, tying to Deep Listening's setup for subjective experiences and a recognition of the unknown in various listening practices.<sup>79</sup> However, philosopher Robin James has critiqued Nancy, stating that "[i]nsofar as Nancy's theory of listening assumes a normatively white philosopher and contrasts this to either blackness or white femininity, it structurally excludes female and nonwhite people from participating in the

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<sup>76</sup> van Maas, *Thresholds of Listening*. The first three chapters are "The Auditory Re-Turn (The Point of Listening)" by Peter Szendy, "'Dear Listener...': Music and the Invention of Subjectivity" by Lawrence Kramer, and "Scenes of Devastation: Interpellation, Finite and Infinite" by Sander van Maas.

<sup>77</sup> Gianmario Borio, ed., *Musical Listening in the Age of Technological Reproduction* (Farnham, ENG: Ashgate Publishing, 2015). See chapters by Steven Feld, "Listening to Histories of Listening: Collaborative Experiments in Acoustemology with Nii Otoo Annan," 91–104; Martin Laliberté, "The Transformation of Musical Listening: The Case of Electroacoustic Music," 203–232.

<sup>78</sup> Nancy, *Listening*.

<sup>79</sup> See also Garth Paine, "Un-knowing: A Strategy for Forging New Directions and Innovative Works Through Experiential Materiality," in *The Routledge International Handbook of Practice-Based Research*, ed. Craig Vear (New York, NY: Routledge, 2022), 255–266.

activity of ‘listening’ (and philosophy).”<sup>80</sup> I respond in my research by including ecofeminist perspectives and diverse artistic voices, by exploring Deep Listening’s concept of dreaming as by Oliveros’s collaborator Ione, and by offering readings from my position as a woman of pieces by artists from historically marginalized communities.

Philosopher-musicologist Peter Szendy references Nancy in *Listen: A History of our Ears* (2008) and investigates how to make a “listening listened to.”<sup>81</sup> He argues that a composer’s arrangement of another’s work discloses their listening approach and focus. He contends there is not an ideal way to listen, though his notion of “competing listenings” seems exclusionary, which I strive to work against.<sup>82</sup> Szendy also poses questions of who has a right to music and to reflect the way they hear it. I build on Szendy and broaden his concepts to include the more-than-human world.

In the article “Headset Culture, Audile Technique, And Sound Space As Private Space” (2003), sound scholar Jonathan Sterne traces techniques of listening, or what he calls “audile technique,” through various cultural contexts in the nineteenth century to explain listening in relation to rationality, the senses, and meaning.<sup>83</sup> This supports the idea in Deep Listening that listening depends on the individual and their context, and it also informs my conclusions regarding the significance of recording and playback technologies for expanding environmental sonic awareness. Ethnomusicologist Ana

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<sup>80</sup> Robin James, “Affective Resonance: On the Uses and Abuses of Music In and For Philosophy,” *PhaenEx* 7, no. 2 (2012): 73.

<sup>81</sup> Szendy, *Listen*.

<sup>82</sup> Szendy, *Listen*, 102.

<sup>83</sup> Jonathan Sterne, “Headset Culture, Audile Technique, And Sound Space As Private Space,” *TMG* 6, no. 2 (2003): 57–82. See also Sterne, *The Audible Past*.

María Ochoa Gautier develops the work of Sterne and others further in *Aurality: Listening and Knowledge in Nineteenth-Century Colombia* (2014).<sup>84</sup> Notably, her insights advise my readings of the case study examples tied to Colombia. She also considers nature/culture relationships, which she terms acoustic assemblages, and recognizes the multiplicity of possible relationships through sounding and listening. Similarly, in *Ways of Listening: An Ecological Approach to the Perception of Musical Meaning* (2005), music psychologist Eric F. Clarke presents an ecological theory of listening in contrast to information-processing theory, with “ecology” referring to the relationship between perceiver and environment.<sup>85</sup> Clarke’s work serves as an example of how to describe music from one personal vantage point while recognizing a myriad of other possibilities, providing a valuable model for my work.

#### Listening as Relational

Literature concerning the various interactions possible between sounds and entities informs how I understand listening, and Deep Listening specifically, as relational. The following ideas, anchored in philosophy and phenomenology, illustrate different ways such relationships play into concepts of listening. Composer Michel Chion examines Schaeffer’s sound object and listening theories in *Sound: An Acouological Treatise* (2016) while focusing on the ties between sound, language, and listening.<sup>86</sup> In his final chapter, Chion asserts the importance of perception for humans to engage with

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<sup>84</sup> Ana María Ochoa Gautier, *Aurality: Listening and Knowledge in Nineteenth-Century Colombia* (Durham, NC: Duke University Press, 2014).

<sup>85</sup> Eric F. Clarke, *Ways of Listening: An Ecological Approach to the Perception of Musical Meaning* (New York, NY: Oxford University Press, 2005).

<sup>86</sup> Chion, *Sound*.

the world through sound.<sup>87</sup> Comparably, in the 2007 work *Listening and Voice: Phenomenologies of Sound*, philosopher Don Ihde presents phenomenology of sound as an alternative to prevalent visual and reductionist theories.<sup>88</sup> He describes how one sound is in fact a reflection of two or more things interacting, useful for my case studies, and in *Experimental Phenomenology* (2012) Ihde further reviews the phenomenological experience as multiple lines of relation.<sup>89</sup>

Similarly, artist and philosopher Salomé Voegelin's 2014 work *Sonic Possible Worlds: Hearing the Continuum of Sound* describes sound as "the invisible layer of the world that shows its relationships, actions, and dynamics."<sup>90</sup> Voegelin employs centering, decentering, and recentering to argue for a phenomenological listening experience of sound in which human listeners may choose sonic possibilities. She therefore recognizes subjectivity and identity in listening, a fitting concept for discussing the individualized Deep Listening practice.<sup>91</sup> Further, Voegelin comments on Oliveros's piece *To Valerie Solanas and Marilyn Monroe in Recognition of Their Desperation* with emphasis not on the score, but instead on the sounds and creation of worlds.<sup>92</sup> Musicologist Nina Eidsheim also considers how humans encounter sound in *Sensing Sound: Singing and Listening as Vibrational Practice* (2015). She analyzes contemporary opera examples to

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<sup>87</sup> Chion, *Sound*, 241.

<sup>88</sup> Ihde, *Listening*.

<sup>89</sup> Don Ihde, *Experimental Phenomenology*, 2nd ed. (Albany, NY: State University of New York Press, 2012), 29.

<sup>90</sup> Voegelin, *Sonic Possible Worlds*, 2.

<sup>91</sup> Voegelin, *Sonic Possible Worlds*, 13.

<sup>92</sup> Voegelin, *Sonic Possible Worlds*, 78.

reveal sound as dynamic and unfixed.<sup>93</sup> By arguing that human listeners must enter into a relationship with sound in order to listen, Eidsheim continues the ideas discussed above. Such views are significant for my consideration of the listener's role and align with Oliveros's view that "everything is living and vibrating."<sup>94</sup> Additionally, invited artists and scholars in the 2019 reader *The Middle Matter: Sound as Interstice* posit that "sound will always involve an interaction," and many contributions, as by Séverine Janssen, Brandon LaBelle, and Franziska Windisch, speak to the role of the human body when engaging with sound.<sup>95</sup> I aim to show how Deep Listening relies on similar understandings while it also extends sonic awareness to nonhuman bodies and entities.

Turning to sonic materialism to explain the relational interaction of matter, Voegelin challenges the sound object argument. In a 2018 podcast presentation, she sets forth sonic thinking as a prototype of new materialism and situates the sonic as what it does rather than an object, as a process or relationship rather than a function.<sup>96</sup> In her 2019 chapter "Sonic Materialism: Hearing the Arche-Sonic," Voegelin again references new materialism to position sound as relational and for humans to situate ourselves in the world, "aid[ing] the reimagination of material relations and processes."<sup>97</sup> Voegelin's

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<sup>93</sup> Nina Sun Eidsheim, *Sensing Sound: Singing and Listening as Vibrational Practice* (Durham, NC: Duke University Press, 2015), 10. This departs from the sound object argument.

<sup>94</sup> Oliveros, "All sounds are music," interview by Zenia Cleigh.

<sup>95</sup> Caroline Profanter, Henry Andersen, and Julia Eckhardt, eds., *The Middle Matter: Sound as Interstice* (Brussels, BEL: Umland, 2019).

<sup>96</sup> Salomé Voegelin, "Sonic Materialism: How to Exist According to Sound," talk, posted December 6, 2018, by Café Culture North East, YouTube, <https://www.youtube.com/watch?v=NA6DKzohUgc>.

<sup>97</sup> Salomé Voegelin, "Sonic Materialism: Hearing the Arche-Sonic," in *The Oxford Handbook of Sound and Imagination* (New York, NY: Oxford University Press, 2019), 2:561.

work follows earlier publications on sonic materialism, such as philosopher Casey O’Callaghan’s 2007 book *Sounds: A Philosophical Theory*.<sup>98</sup> Here O’Callaghan contests the visually-dominated perception of sound to propound sounds as events. O’Callaghan also influenced cultural theorist and curator Christoph Cox, who stands as a major supporter of sonic materialism. Cox’s article “Beyond Representation and Signification” from 2011 proposes materialism as a framework for discussing sonic art, and he later expanded the article to become the first chapter of his book *Sonic Flux: Sound, Art, and Metaphysics* in 2018.<sup>99</sup> Chapters 1 through 4 of *Sonic Flux* are most relevant to my dissertation for the centering on sensation and perception, especially in the more-than-human world.

Other philosophers such as Marie Thompson, Robin James, and Iain Campbell criticize Cox for perpetuating Western whiteness and essentialism,<sup>100</sup> and music theorist Andrew Chung evaluates new materialism generally as flattening ontologies and reinscribing a fear of difference.<sup>101</sup> Similar critiques are raised by scholars Sarah Ahmed, Zoe Todd, and Alison Ravenscroft, who advocate for preceding feminist and Indigenous

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<sup>98</sup> Casey O’Callaghan, *Sounds: A Philosophical Theory* (New York, NY: Oxford University Press, 2007).

<sup>99</sup> Christoph Cox, “Beyond Representation and Signification: Toward a Sonic Materialism,” *Journal of Visual Culture* 10, no. 2 (2011): 145–161; Christoph Cox, *Sonic Flux: Sound, Art, and Metaphysics* (Chicago, IL: The University of Chicago Press, 2018).

<sup>100</sup> Marie Thompson, “Whiteness and the Ontological Turn in Sound Studies,” *Parallax* 23, no. 3 (2017): 266–282; Robin James, “Some Thoughts on Cox’s Apologia for Sonic Materialism,” *It’s Her Factory*, May 3, 2018, <https://www.its-her-factory.com/2018/05/some-thoughts-on-coxs-apologia-for-sonic-materialism/>; Iain Campbell, “Sound’s Matter: ‘Deleuzian Sound Studies’ and the Problems of Sonic Materialism,” *Contemporary Music Review* 39 no. 5 (2020): 618–637.

<sup>101</sup> Andrew J. Chung, “Vibration, Difference, and Solidarity in the Anthropocene: Ethical Difficulties of New Materialist Sound Studies and Some Alternatives,” *Resonance* 2, no. 2 (2021): 218–241.

materialisms focused on interconnections with the more-than-human world.<sup>102</sup> To this end, in Chapters 3 and 5 of this dissertation, I address Indigenous and traditional knowledge when discussing relating to and with the environment through listening. In *Geosonics: Listening Through Earth's Soundscapes* (2024), media studies scholar Joshua Dittrich also discusses relational listening based in new materialism along with digital studies and environmental media studies.<sup>103</sup> His conception of listening as connected to geologic scale and mediation informs how I approach the interrelations of humans, digital technologies, and the earth.

Additionally, Feld's concept of acoustemology is crucial to my dissertation. Acoustemology "joins acoustics to epistemology to investigate sounding and listening as a knowing-in-action: a knowing-with and knowing-through the audible."<sup>104</sup> It presents sounding and listening as ways of knowing and, as Feld explains in the chapter "Acoustemology" from *Keywords in Sound* (2015), it connects knowing with context and experience, and it embraces relationships with others. This therefore allows for interspecies relationships based in sounds. The relational aspect is important since "[k]nowing through relations insists that one does not simply 'acquire' knowledge but, rather, that one knows through an ongoing cumulative and interactive process of

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<sup>102</sup> Sarah Ahmed, "Open Forum Imaginary Prohibitions: Some Preliminary Remarks on the Founding Gestures of the 'New Materialism'," *European Journal of Women's Studies* 15, no. 1 (2008): 23–39; Zoe Todd, "An Indigenous Feminist's Take on the Ontological Turn: 'Ontology' is Just Another Word for Colonialism," *Journal of Historical Sociology* 29, no. 1 (March 2016): 4–22; Alison Ravenscroft, "Strange Weather: Indigenous Materialisms, New Materialism, and Colonialism," *Cambridge Journal of Postcolonial Literary Theory* 5, no. 3 (Sept. 2018): 353–370.

<sup>103</sup> Joshua Dittrich, *Geosonics: Listening Through Earth's Soundscapes* (New York, NY: Bloomsbury Academic, 2024).

<sup>104</sup> Steven Feld, "Acoustemology," in *Keywords in Sound*, ed. David Novak and Matt Sakakeeny (Durham, NC: Duke University Press, 2015), 12. See also Steven Feld, *Acoustemology: Four Lectures*, 2024, <https://www.stevenfeld.net/acoustemology-four-lectures>.

participation and reflection.”<sup>105</sup> Feld’s framing of acoustemology as relational but also “subjective, constructed, [and] selective” with an awareness of positionality advises my understanding of sound and listening and is referenced throughout the dissertation.<sup>106</sup> As sound studies scholar Tom Rice elaborates in his insightful entry for *The International Encyclopedia of Anthropology* (2018), acoustemology also “acknowledge[s] the interplay between sound and the other senses [and] suggests an open-mindedness to the notion that acoustemology might expand beyond ‘a limited definition of the auditory’,” which I consider when situating listening as multi-sensory.<sup>107</sup> Recognizing the full scope of sound’s impact, musicologist Suzanne Cusick also references acoustemology in her work on the weaponization of sound (2013).<sup>108</sup> Based on Jean-Luc Nancy’s “re-soundings” but framed in a non-utopian way, Cusick’s vibration-centered framework joins Chion, Ihde, Eidsheim, Voegelin, and Feld in approaching listening as a relational practice. Importantly, their relation-based understandings allow for inclusive ways of knowing and experiencing through sound.

### Listening as Multi-Sensory

I additionally focus on multi-sensory, full-body, and embodied listening to move beyond the visual/sonic binary and to open listening across abilities.<sup>109</sup> Often linked with

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<sup>105</sup> Feld, “Acoustemology,” 13–14. I find this also coincides with Dylan Robinson’s work on settler “hungry” listening.

<sup>106</sup> Feld, “Acoustemology,” 14–15.

<sup>107</sup> Rice, “Acoustemology.”

<sup>108</sup> Cusick, “Towards an Acoustemology of Detention in the ‘Global War on Terror’,” 278.

<sup>109</sup> For critiques of the prevalence of visual culture in sound studies, see Jonathan Sterne, ed., *The Sound Studies Reader* (New York, NY: Routledge, 2012).

philosopher Maurice Merleau-Ponty, embodiment in music is a sprawling topic with many branches beyond the scope of this dissertation, such as embodied music cognition theory.<sup>110</sup> I spotlight instead how embodied listening has played a part in musicology since Suzanne Cusick’s call in 1994 for an “embodied music theory” to recognize elements of the bodily experience, and therefore gender and power, in listening.<sup>111</sup> In 2004, Carolyn Abbate proposes a “drastic” physicality of music performance as a means of knowing with her article “Music—Drastic or Gnostic?” to critique academic approaches to music reliant on the “rational.”<sup>112</sup> Similarly, in *Boccherini’s Body: An Essay in Carnal Musicology* (2006), Elisabeth Le Guin approaches musicological analysis explicitly as a performer and presents alternative examination methods for musicologists, which I take as a model for bodily experience as research.<sup>113</sup> Jessica Holmes argues for an expanded conception of listening to include multiple senses in her 2017 article “Expert Listening beyond the Limits of Hearing: Music and Deafness” at the juncture of d/Deafness and listening.<sup>114</sup> Together these sources advocate for multi-sensory listening in musicological discourse and inform my research approach and methodology.

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<sup>110</sup> For example, see Marc Leman, *Embodied Music Cognition and Mediation Technology* (Cambridge, MA: MIT Press, 2007).

<sup>111</sup> Suzanne G. Cusick, “Feminist Theory, Music Theory, and the Mind/Body Problem,” *Perspectives of New Music* 32 (1994): 8–27.

<sup>112</sup> Carolyn Abbate, “Music—Drastic or Gnostic?,” *Critical Inquiry* 30 (2004): 505–536.

<sup>113</sup> Elisabeth Le Guin, *Boccherini’s Body: An Essay in Carnal Musicology* (Berkeley, CA: University of California Press, 2006).

<sup>114</sup> Jessica Holmes, “Expert Listening beyond the Limits of Hearing: Music and Deafness,” *Journal of the American Musicological Society* 70, no. 1 (Spring 2017): 171–220.

Related are the concepts by sound scholar and artistic director Gascia Ouzounian in “Embodied Sound: Aural Architectures and the Body” (2006) of situated listening and embodied reception (with reference to Andra McCartney’s “full-bodied hearing”) to investigate what, where, and how sounds are experienced.<sup>115</sup> Ouzounian writes from the viewpoint of a practitioner, as does acoustic ecologist and composer Garth Paine. Paine writes about multi-modal listening, also called somaphony, and proposes it as a method to listen to a space in “Ecologies of Listening and Presence: Perspectives from a Practitioner” (2016), “Acoustic Ecology 2.0” (2017), and *The Environmental Listening Field Guide* (2024).<sup>116</sup> Somaphony is the subtle whole-body experience of a soundfield, and it relates to Feld’s acoustemology. Paine also emphasizes that sound memories remain in our bodies, an important element for me when considering how subjective listening experiences are formed. As Ouzounian and Paine model, I approach Deep Listening work as a practitioner.

Comparable to somaphony is English rhetoric scholar Steph Ceraso’s concept of multimodal listening in *Sounding Composition: Multimodal Pedagogies for Embodied Listening* (2018), which underlies her listening pedagogy with attention to the relationship between sounds, bodies, and environments.<sup>117</sup> I continue in a similar vein to explore how artists compose for and listen to various human and nonhuman bodies. In the

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<sup>115</sup> Gascia Ouzounian, “Embodied Sound: Aural Architectures and the Body,” *Contemporary Music Review* 25, no. 1–2 (2006): 69–79.

<sup>116</sup> Garth Paine, “Ecologies of Listening and Presence: Perspectives from a Practitioner,” *Contemporary Music Review* 35, no. 3 (2016): 362–371; Paine, “Acoustic Ecology 2.0;” Paine and Yang, *The Environmental Listening Field Guide*.

<sup>117</sup> Steph Ceraso, *Sounding Composition: Multimodal Pedagogies for Embodied Listening* (Pittsburgh, PA: University of Pittsburgh Press, 2018).

2020 entry “Listening,” sound studies scholar Marcel Cobussen questions the difference between hearing and listening and argues for simultaneous “regimes” of distracted and attentive listening for a holistic and multi-sensorial experience.<sup>118</sup> His idea of a listening shift from background to foreground strikes me as similar to the balance of Deep Listening with focal and global attention and similarly incorporates the full body in the listening experience.

### Listening as Determined by the Individual

Due to the highly individualized nature of listening shaped by cultural backgrounds and past experiences, the listener is important in determining a sound. Further, listening is influenced by aspects like time of day, weather, elevation, surroundings, emotions, and fatigue. Many of the authors previously mentioned are proponents of this concept. Cage wrote about the listener’s function and active role, saying “Most people think that when they hear a piece of music, they’re not doing anything but that something is being done to them. Now this is not true ... they themselves are doing it.”<sup>119</sup> Oliveros similarly explains in the resourceful *Deep Listening: A Composer’s Sound Practice* (2005) that Deep Listening was partly a result of becoming aware of her own listening.<sup>120</sup> To this end, I adopt Ingrid Monson’s concept of “perceptual agency” (or agencies). Perceptual agency is “what people choose to do with musical sounds given the sensory inputs, the manifold cognitive processing possibilities

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<sup>118</sup> Cobussen, “Listening.”

<sup>119</sup> John Cage quoted in Nyman, *Experimental Music*, 24.

<sup>120</sup> Oliveros, *Deep Listening: A Composer’s Sound Practice*, xxiv.

of the brain, and the sociocultural contexts in which they listen and perform” and therefore recognizes how relationships and contexts inform sound experiences.<sup>121</sup>

Peter Szendy asserts in *Listen: A History of our Ears* (2008) that “*it is listeners who make music*”<sup>122</sup> and he reflects on listening to oneself to better understand relationships. Further, his concept of making a “listening listened to” informs my methodology as I recognize my own individualized experience in the listening and research process.<sup>123</sup> Like Szendy, Salomé Voegelin maintains in *Sonic Possible Worlds* (2014) that listening involves placing oneself in the midst of sound relationships.<sup>124</sup> In the 2018 book *The Race of Sound: Listening, Timbre, and Vocality in African American Music*, Nina Eidsheim places responsibility for characterizing voice in the *listener* rather than the performer.<sup>125</sup> I find this follows Nancy in his implication that the listener determines the meaning of sounds.<sup>126</sup> Additionally, Tom A. Garner’s survey of global interviewees in *How the World Listens: The Human Relationship with Sound across the World* (2023) reveals how the meaning of sound can change from person to person.<sup>127</sup> In this dissertation, I rely on such ideas to discuss selected works.

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<sup>121</sup> Ingrid Monson, “Hearing, Seeing, and Perceptual Agency,” *Critical Inquiry* 34, no. S2 (2008): S52.

<sup>122</sup> Szendy, *Listen*, 99. Italics in original.

<sup>123</sup> Szendy, *Listen*, 5–6.

<sup>124</sup> Voegelin, *Sonic Possible Worlds*, 121–122.

<sup>125</sup> Eidsheim, *The Race of Sound*.

<sup>126</sup> Nancy, *Listening*.

<sup>127</sup> Tom A. Garner, *How the World Listens: The Human Relationship with Sound across the World* (New York, NY: Routledge, 2023).

## Nonhuman Listeners

The scholarship referenced throughout this literature review thus far focuses primarily on the human listener. Sterne admits in *The Sound Studies Reader* (2012) that much of the work is defined only in relation to the human. Additionally, while contending with the Western emphasis on sound studies, only a few contributors to *Keywords in Sound* (2015), as in *The Sound Studies Reader*, acknowledge nonhuman entities as sounding and listening beings.<sup>128</sup> However, as musicologist and anthropologist Georgina Born contends, sound can be conceptualized as “inherently fluid and relational sonic processes ... [to] become attuned to the hybrid, human-and-nonhuman assemblages through which sound is both produced and experienced.”<sup>129</sup> This presents an opportunity to continue expanding sound studies beyond the human, which I and researchers across the humanities strive to do.

Based in semiotics and anthropology, in *How Forests Think: Toward an Anthropology Beyond the Human* (2014), Eduardo Kohn challenges assumptions of human thought through work with the Runa, arguing that living beings like trees and dogs respond to signs of their environment.<sup>130</sup> While not concerning listening and sound, Kohn gives examples of how to discuss “beyond the human” and inclusively share space with others. Related, in the 2011 book *Surface Encounters: Thinking with Animals and Art*, literary and cultural theorist Ron Broglio analyzes artwork that unveils interspecies

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<sup>128</sup> Novak and Sakakeeny, *Keywords in Sound*.

<sup>129</sup> Georgina Born, “On Nonhuman Sound–Sound as Relation,” in *Sound Objects* (Durham, NC: Duke University Press, 2020), 187.

<sup>130</sup> Eduardo Kohn, *How Forests Think: Toward an Anthropology Beyond the Human* (Berkeley, CA: University of California Press, 2014).

relationships and grapples with the impossibility of true animal phenomenology by humans.<sup>131</sup> Likewise, language scholar Candace Kuby considers ontologies and posthumanism in relation to literature in her 2019 article “(Re)Thinking and (Re)Imagining Social(ing) With a More-Than-Human Ontology Given the Limits of (Re)(Con)Straining Language.”<sup>132</sup> These works, though not about sound, advise me on the restrictions of studying the more-than-human experience.

Researchers in music consider the interaction of humans and the more-than-human world to add the sonic component, and scholarship in this area has increased. For example, composer Emily Doolittle, interested in zoömusicology and biomusicology, highlights musical features shared between species like birds and humans and pushes for reconsideration of the relationships between humans, other species, and music in her dissertation “Other Species Counterpoint: An Investigation of the Relationship between Human Music and Animal Songs” (2007) and in her article “Crickets in the Concert Hall: A History of Animals in Western Music” (2008).<sup>133</sup>

Likewise, cultural theorist Dominic Pettman queries the voices of animals as well as the relationship of voices and sound with identity in *Sonic Intimacy: Voice, Species*,

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<sup>131</sup> Ron Broglio, *Surface Encounters: Thinking with Animals and Art* (Minneapolis, MN: University of Minnesota Press, 2011).

<sup>132</sup> Candace Kuby, “(Re)Thinking and (Re)Imagining Social(ing) With a More-Than-Human Ontology Given the Limits of (Re)(Con)Straining Language,” *Cultural Studies, Critical Methodologies* 19, no. 2 (April 2019): 126–143.

<sup>133</sup> Emily Doolittle, “Other Species Counterpoint: An Investigation of the Relationship between Human Music and Animal Songs” (PhD diss., Princeton University, 2007), ProQuest (3236172); Emily Doolittle, “Crickets in the Concert Hall: A History of Animals in Western Music,” *Trans-Cultural Music Review* 12 (2008), <http://www.sibetrans.com/trans/articulo/94/crickets-in-the-concert-hall-a-history-of-animals-in-western-music>.

*Technics (or, How to Listen to the World)* (2017).<sup>134</sup> For my dissertation, I consulted Pettman’s chapters on the “creaturely” and “ecological” voice. Rachel Mundy, a musicologist investigating posthumanism, similarly probes interspecies relationships and how humans discuss multispecies voices in her 2018 publication *Animal Musicalities: Birds, Beasts, and Evolutionary Listening*.<sup>135</sup> Visual artist Austin McQuinn explores vulnerability in human-animal sonic engagements in *Becoming Audible: Sounding Animality in Performance* (2021), and his chapter on the parallels between listening to birdsong and musical recording technologies advises my work considering the more-than-human world and audio technologies.<sup>136</sup> Similarly, ethnomusicologist Trevor Reed’s 2018 work “Reclaiming Ownership of the Indigenous Voice: The Hopi Music Repatriation Project” on the repatriation of Indigenous recordings reflects how ceremonial songs, though performed by humans as a human art form, bring entities such as humans, animals, plants, spirits, and the weather into relationship.<sup>137</sup> In this way, sound and listening act as methods of connection, and I rely on these and the aforementioned works to inform how I approach sound and listening in and with the more-than-human world.

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<sup>134</sup> Dominic Pettman, *Sonic Intimacy: Voice, Species, Technics (or, How to Listen to the World)* (Stanford, CA: Stanford University Press, 2017). See chapters “The Creaturely Voice” and “The Ecological Voice (*vox mundi*).”

<sup>135</sup> Rachel Mundy, *Animal Musicalities: Birds, Beasts, and Evolutionary Listening* (Middletown, CT: Wesleyan University Press, 2018).

<sup>136</sup> Austin McQuinn, *Becoming Audible: Sounding Animality in Performance* (University Park, PA: Pennsylvania State University Press, 2021).

<sup>137</sup> Trevor Reed, “Reclaiming Ownership of the Indigenous Voice: The Hopi Music Repatriation Project,” in *The Oxford Handbook of Musical Repatriation*, ed. Frank Gunderson, Robert C. Lancefield, and Bret Woods (New York, NY: Oxford University Press, 2018), 627–654.

Though discussion about environments and sounds commonly focuses on nonhuman animals, I consult growing research in plant neurobiology to bring plants into the conversation. Sometimes responding to pseudoscience like *The Secret Life of Plants* (1973) by Christopher Bird and Peter Tompkins, scientists continue to explore how plants interact with their surroundings.<sup>138</sup> In *What a Plant Knows: A Field Guide to the Senses* (2012), plant biologist Daniel Chamovitz highlights plant senses, framing their experience through human conceptions of seeing, smelling, tasting, feeling, hearing, positioning, and remembering.<sup>139</sup> Similarly, botanist Stefano Mancuso, a significant figure in plant neurobiology, researches plants as intelligent and social organisms. In *The Revolutionary Genius of Plants: A New Understanding of Plant Intelligence and Behavior* (2018), Mancuso studies plants as learning and remembering beings.<sup>140</sup> Also seeking to better understand plant behavior, researcher Karen Bakker covers examples of digital technologies allowing access to phytoacoustics and phonotropism (how plants make and respond to sound) in *The Sounds of Life: How Digital Technology Is Bringing Us Closer to the Worlds of Animals and Plants* (2022).<sup>141</sup> In contrast, philosopher Michael Marder rethinks the changes a plant point of view would necessitate, ultimately suggesting phytophenomenology (phenomenology, botany, and population ecology) as a

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<sup>138</sup> Christopher Bird and Peter Tompkins, *The Secret Life of Plants* (New York, NY: Harper & Row, 1973).

<sup>139</sup> Daniel Chamovitz, *What a Plant Knows: A Field Guide to the Senses* (New York, NY: Scientific American, 2012).

<sup>140</sup> Stefano Mancuso, *The Revolutionary Genius of Plants: A New Understanding of Plant Intelligence and Behavior*, trans. Vanessa Di Stefano (New York, NY: Atria, 2018). See also František Baluška, Stefano Mancuso, and Dieter Volkmann, eds., *Communication in Plants: Neuronal Aspects of Plant Life* (Heidelberg, DEU: Springer, 2006); Stefano Mancuso and Sergey Shabala, eds., *Rhythms in Plants: Phenomenology, Mechanisms, and Adaptive Significance* (Heidelberg, DEU: Springer, 2007).

<sup>141</sup> Bakker, *The Sounds of Life*.

framework for synthesizing data.<sup>142</sup> This noteworthy research in plant intelligence guides my approach when considering how sessile beings are treated in certain artworks.

Helpful as a survey of music practices involving plants as instruments and participants is Carlo Patrão's blog post "Botanical Rhythms: A Field Guide to Plant Music" (2018).<sup>143</sup> Through mention of artists such as Cage, Annea Lockwood, Leslie Garcia, Christine Ödlund, Zach Poff, and Špela Petrič, Patrão points to how creating with plants may build interspecies relationships. In the related field of bioacoustics, which considers sounds made by and/or impacting living organisms, I turn to the work of evolutionary ecologist Monica Gagliano, who crucially researches and brings attention to sound in relation to plants.<sup>144</sup> In "Green Symphonies: A Call for Studies on Acoustic Communication in Plants" (2013), she discusses how plants receive and produce sound understood as vibrations of energy,<sup>145</sup> which I relate to musicologists' vibration-centered frameworks of listening. In the chapter "Bioacoustics" in *Grafts: Writings on Plants* (2016), Gagliano and Marder consider the "music" and "voices" of plants but on plants'

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<sup>142</sup> Michael Marder, "Plant Intentionality and the Phenomenological Framework of Plant Intelligence," *Plant Signaling & Behavior* 7, no. 11 (2012): 1365–1372.

<sup>143</sup> Carlo Patrão, "Botanical Rhythms: A Field Guide to Plant Music," *Sounding Out!*, February 26, 2018, <https://soundstudiesblog.com/2018/02/26/botanical-rhythms-a-field-guide-to-plant-music/>.

<sup>144</sup> See also Francisco López, "Profound Listening and Environmental Sound Matter," in *Audio Culture: Readings in Modern Music*, ed. Christoph Cox and Daniel Warner (New York, NY: Continuum, 2004), 82–87. For bioacoustic research in nonhuman animals, see Nicolas Mathevon, *The Voices of Nature: How and Why Animals Communicate* (Princeton, NJ: Princeton University Press, 2023).

<sup>145</sup> Monica Gagliano, "Green Symphonies: A Call for Studies on Acoustic Communication in Plants," *Behavioral Ecology* 24, no. 4 (July 1, 2013): 789–96. See also Elizabeth Katherine Miller, "Sylvan Sounds: Connecting with the Forest through Listening and Sound Visualisation" (PhD diss., Royal College of Art, 2023), Order ProQuest (31224461).

own terms, without changing their modes of sound and time to fit human conceptions.<sup>146</sup> Gagliano also co-edited *The Language of Plants: Science, Philosophy, Literature* (2017) and wrote *Thus Spoke the Plant: A Remarkable Journey of Groundbreaking Scientific Discoveries and Personal Encounters with Plants* (2018), both of which aim to increase awareness of plants as receivers and emitters, particularly outside of common Western conceptions.<sup>147</sup> Musicologist Sabine Feisst’s work in the essay “Sustaining Sonic Futures through Understanding Hidden Acoustic Ecologies” (2025) importantly expands the discussion to include inaudible “airborne, subterranean, and subaquatic sounds” of soil (along with bats and glaciers).<sup>148</sup> This all sets the stage for my reading of scores with plants.

Skwah artist, curator, and researcher Dylan Robinson argues for a restructuring to include Indigenous practices (rather than fitting them into a Western settler colonial perception) and draws attention to works “for” rather than “about” nonhuman listeners, such as the land.<sup>149</sup> His work is paramount to mine. In the collaborative conclusion to *Hungry Listening: Resonant Theory for Indigenous Sound Studies* (2020), scholars Deborah Wong and Ellen Waterman join Robinson to discuss listening. Notable for my

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<sup>146</sup> Monica Gagliano and Michael Marder, “Bioacoustics,” in *Grafts: Writings on Plants*, ed. Michael Marder (Minneapolis, MN: University of Minnesota Press, 2016), 101–102.

<sup>147</sup> Monica Gagliano, John Ryan, and Patricia I. Vieira, eds., *The Language of Plants: Science, Philosophy, Literature* (Minneapolis, MN: University of Minnesota Press, 2017); Monica Gagliano, *Thus Spoke the Plant: A Remarkable Journey of Groundbreaking Scientific Discoveries and Personal Encounters with Plants* (Berkeley, CA: North Atlantic Books, 2018).

<sup>148</sup> Sabine Feisst, “Sustaining Sonic Futures through Understanding Hidden Acoustic Ecologies,” in *Soundstainability: Making Future From Listening*, ed. Emiliano Battistini and Francesco Michi (Giulianova, ITA: Galaad Edizioni, 2025). Many thanks to Dr. Feisst for sharing this chapter with me.

<sup>149</sup> Dylan Robinson, *Hungry Listening: Resonant Theory for Indigenous Sound Studies* (Minneapolis, MN: University of Minnesota Press, 2020), 189.

dissertation, they introduce “the possibility of Deep Listening as a method for decolonizing listening,” and talk specifically about how Oliveros’s sonic meditation “Environmental Dialogue” with its call to reinforce sounds (not imitate or transform) resists hungry/colonial listening.<sup>150</sup> They go on to describe responsive and responsible listening as a constant shift of recentering,<sup>151</sup> which I consider as related to plurality and like Voegelin’s phenomenological listening themes as discussed above. I work in this dissertation to extend such listening practices to the more-than-human world. Overall, scholars in sound studies, various listening philosophies, and plant and animal studies provide conceptions of sound and listening, and there remains an opportunity to bring them into closer dialogue centered around Deep Listening.

### Deep Listening

In this context of sound and listening, the focus of my dissertation is Deep Listening, a meditative approach to increase sonic awareness. Thus, the writings of Pauline Oliveros and significant members of the Deep Listening community serve as primary sources and play an essential role in the following chapters. Among Oliveros’s many articles and books on the practice, which continue in prominence and use within the Deep Listening community, her volume *Deep Listening: A Composer’s Sound Practice* (2005) contains a wide range of exercises, scores, and commentary about listening, meditation, improvisation, community, multi-dimensional listening, and play.<sup>152</sup> In this book, she differentiates between the Deep Listening practice and common

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<sup>150</sup> Robinson, *Hungry Listening*, 244, 245.

<sup>151</sup> Robinson, *Hungry Listening*, 250.

<sup>152</sup> Oliveros, *Deep Listening: A Composer’s Sound Practice*.

use of the term “deep listening” by Vietnamese Zen Buddhist monk Thích Nhất Hạnh, clarifying that Deep Listening is not associated with a religious context.<sup>153</sup> Other writings by Oliveros such as *Sounding the Margins* (2010), “Auralizing in the Sonosphere: A Vocabulary for Inner Sound and Sounding” (2011), and *Anthology of Text Scores* (2013) reveal her thoughts on a wide array of topics related to composing, sound, and Deep Listening.<sup>154</sup> Her 2007 article “My ‘American Music’” is significant for my dissertation because Oliveros expresses her relationship with landscapes and environmental sounds, specifically illustrating how sonic experiences and memories of place impacted her listening, which grants a richer understanding of Deep Listening.<sup>155</sup>

Integral to the Deep Listening practice but often absent in musicological coverage of Deep Listening are publications by Oliveros’s long-time collaborators writer Carole Ione (known as IONE or Ione) and dancer Gold, for they write about the dream and movement modalities of Deep Listening. Ione’s work in *Pride of Family: Four Generations of American Women of Color* (1991), *Listening in Dreams* (2005), and *Spell Breaking: Remembered Ways of Being* (2013) help me understand how dreams and ancestry are woven into Deep Listening.<sup>156</sup> In Gold’s book *Deeply Listening Body* (2018),

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<sup>153</sup> Oliveros, *Deep Listening: A Composer’s Sound Practice*, xxiv. Thích Nhất Hạnh wrote prolifically. For one discussion of deep listening, see Thích Nhất Hạnh, *The Heart of the Buddha’s Teaching* (New York, NY: Harmony Books, 2015).

<sup>154</sup> Pauline Oliveros, *Sounding the Margins: Collected Writings 1992–2009* (Kingston, NY: Deep Listening Publications, 2010); Pauline Oliveros, “Auralizing in the Sonosphere: A Vocabulary for Inner Sound and Sounding,” *Journal of Visual Culture* 10, no. 2 (2011): 162–168; Pauline Oliveros, *Anthology of Text Scores*, ed. Samuel Golter and Lawton Hall (Kingston, NY: Deep Listening Publications, 2013).

<sup>155</sup> Pauline Oliveros, “My ‘American Music’: Soundscape, Politics, Technology, Community,” *American Music* 25, no. 4 (2007): 389–404.

<sup>156</sup> Carole Ione, *Pride of Family: Four Generations of American Women of Color* (New York, NY: Summit Books, 1991); Carole Ione, *Listening in Dreams* (New York, NY: iUniverse, Inc., 2005); Carole Ione, *Spell Breaking: Remembered Ways of Being* (Kingston, NY: Deep Listening Institute, 2013).

she guides practitioners in movement using exercises still practiced in Deep Listening settings today.<sup>157</sup> I further review these dream and movement modalities in Chapters 4, 5, and 6. It is clear that Oliveros, Ione, and Gold intended their publications for use in and continuation of the practice. Thus, anthologies of essays and scores serve as tools for a continuing and evolving practice. Collections such as the *Anthology of Essays on Deep Listening* (2012) edited by Monique Buzzarté and Tom Bickley, volumes of the *Deep Listening Anthology: Scores from the Community of Deep Listeners* (2009, 2010), and *A Year of Deep Listening* (2025) contain important source material from the community.<sup>158</sup> Reflections by Sharon Stewart, Ximena Alarcón Díaz and Ron Herrema, Edward Shanken and Yolande Harris, and Tomie Hahn further contribute by providing examples of how practitioners experience and continue to use Deep Listening in creative realms.<sup>159</sup> My dissertation is one of the first musicological sources to offer coverage of these publications and the larger Deep Listening network.

Much research about Deep Listening as a practice is done by those in the community, while musicologists typically spotlight Oliveros and her music. Work such as Heidi Von Gunden's *The Music of Pauline Oliveros* (1983), Martha Mockus's

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<sup>157</sup> Heloise Gold, *Deeply Listening Body* (Kingston, NY: Deep Listening Publications, 2018).

<sup>158</sup> Monique Buzzarté and Tom Bickley, eds., *Anthology of Essays on Deep Listening* (Kingston, NY: Deep Listening Publications, 2012); Marc Jensen, ed., *Deep Listening Anthology: Scores from the Community of Deep Listeners* (Kingston, NY: Deep Listening Publications, 2009); Marc Jensen, ed., *Deep Listening Anthology II: Scores from the Community of Deep Listeners* (Kingston, NY: Deep Listening Publications, 2010); Stephanie Loveless, ed., *A Year of Deep Listening: 365 Text Scores for Pauline Oliveros* (Newark, NJ: Terra Nova Press, 2025).

<sup>159</sup> Sharon Stewart, "Listening to Deep Listening," *Journal of Sonic Studies* 2, no. 1 (May 2012), <https://www.researchcatalogue.net/view/261881/261882>; Ximena Alarcón and Ron Herrema, "Pauline Oliveros: A Shared Resonance," *Organised Sound* 22, no. 1 (2017): 7–10; Edward Shanken and Yolande Harris, "A Sounding Happens: Pauline Oliveros, Expanded Consciousness, and Healing" *Soundscape* 16 (2017): 4–14; Tomie Hahn, "Sputtering Rituals: Remembering Pauline Oliveros as Improvisation-in-Action," *Critical Studies in Improvisation* 12, no. 2 (2018): 1–3.

*Sounding Out: Pauline Oliveros and Lesbian Musicality* (2008), and David Bernstein’s *The San Francisco Tape Music Center: 1960s Counterculture and the Avant-Garde* (2008) provide a basis for Oliveros research and explain key themes in her work.<sup>160</sup> Oliveros herself, von Gunden, and Adam Tinkle each discuss the power dynamics and equalizing feature of Deep Listening, a key element I draw out in Chapters 3 and 4.<sup>161</sup> Denise Von Glahn’s coverage of Oliveros in *Music and the Skillful Listener: American Women Compose the Natural World* (2013) and Stephanie Jensen-Moulton’s chapter “Sounds of the Sweatshop: Pauline Oliveros and ‘Maquilapolis’” (2014) further inform my dissertation for their attention to Oliveros’s work with environmental sounds.<sup>162</sup> Eloy Ramirez’s master’s thesis “Queer Theory and Third-Wave Feminism in Pauline Oliveros’s Meditative Works” (2020) and John Kapusta’s article “Pauline Oliveros, Somatics, and the New Musicology” (2021) aid me in positioning Deep Listening within concurrent cultural and philosophical trends.<sup>163</sup> Tara Browner’s noteworthy critique from

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<sup>160</sup> Von Gunden, *The Music of Pauline Oliveros*; Martha Mockus, *Sounding Out: Pauline Oliveros and Lesbian Musicality* (New York, NY: Routledge, 2008); David Bernstein, ed., *The San Francisco Tape Music Center: 1960s Counterculture and the Avant-Garde* (Berkeley, CA: University of California Press, 2008).

<sup>161</sup> Oliveros, *Software for People*, 161–163; Von Gunden, *The Music of Pauline Oliveros*, 147; Adam Tinkle, “Sound Pedagogy: Teaching Listening Since Cage,” *Organised Sound* 20, no. 2 (2015): 228–230.

<sup>162</sup> Denise Von Glahn, *Music and the Skillful Listener: American Women Compose the Natural World* (Bloomington, IN: Indiana University Press, 2013); Stephanie Jensen-Moulton, “Sounds of the Sweatshop: Pauline Oliveros and ‘Maquilapolis’,” in *Tomorrow Is the Question: New Directions in Experimental Music Studies*, ed. Benjamin Piekut (Ann Arbor, MI: University of Michigan Press, 2014), 220.

<sup>163</sup> Eloy Ramirez, “Queer Theory and Third-Wave Feminism in Pauline Oliveros’s Meditative Works” (MM thesis, University of Arizona, 2020), ProQuest (28025772); John Kapusta, “Pauline Oliveros, Somatics, and the New Musicology,” *The Journal of Musicology* 38, no. 1 (2021): 1–31. See also Taylor McClaskie, “Cultivating Ecological Consciousness: Pauline Oliveros’s Deep Listening as Deep Ecology,” talk presented by Baker-Nord Center for the Humanities, October 27, 2020, posted November 6, 2020, by Case Western Reserve University, YouTube, <https://www.youtube.com/watch?v=s-OsRDLV1v8>.

2000 of Oliveros's opera *Crow Two* serves as a reminder of appropriation trends, also examined by Stephanie Loveless and Freya Zinovief in their chapter "Listening to Our Listening: Deep Listening in Critical Sites," and further discussed in Chapters 3 and 5 of this dissertation along with Indigenous listening practices.<sup>164</sup> An increased number of theses and dissertations display current interest in Deep Listening, though often from a composer's point of view, which is different from my position.<sup>165</sup>

There remains a disconnect between practitioners and musicologists in that the Deep Listening modalities of dreaming and movement are not included in musicological scholarship. As both a practitioner and musicologist, I argue in subsequent chapters that the modalities, and especially dreaming, are vital to the Deep Listening experience. By embracing these fundamental aspects, I evince the complexities and flexibility of Deep Listening and highlight prominent but overshadowed community members, such as Ione and Gold. I also focus on a selection of Deep Listening's characteristics as they relate to

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<sup>164</sup> Tara Browner, "'They Could Have an Indian Soul': *Crow Two* and the Processes of Cultural Appropriation," *The Journal of Musicological Research* 19, no. 3 (2000): 243–263; Stephanie Loveless and Freya Zinovief, "Listening to Our Listening: Deep Listening in Critical Sites," in *Situated Listening: Attending to the Unheard*, ed. Stephanie Loveless, Tullis Rennie, Morten Søndergaard, and Freya Zinovieff (London, ENG: Focal Press, 2025), 33–51.

<sup>165</sup> See Kelley Kipperman, "Projections & Reflections: The Listening & Sounding of Queer Improvising Bodies" (MA thesis, Mills College, 2017), ProQuest (10283136); Hannah Christina McLaughlin, "Pauline Oliveros and the Quest for Musical Utopia" (MA thesis, Brigham Young University, 2018), ProQuest (28112965); Louise Marshall, "Deep Listening: The Strategic Practice of Female Experimental Composers Post 1945" (PhD diss., University of the Arts London, 2018), ProQuest (13873773); Senem Pirlir, "Disruption, Dis/orientation, and Intra-Action: Recipes for Creating a Queer Utopia in Audiovisual Space" (PhD diss., Rensselaer Polytechnic Institute, 2019), ProQuest (13899883); Laura Rose Schwartz, "Repair and Self-Formation through Verbal Notation: Analyzing Self in Works by Jennifer Walshe and Pauline Oliveros and *An Anatomical Study on Escape* [Original Composition]" (PhD diss., University of Pittsburgh, 2019), ProQuest (13857324); Suzanne Thorpe, "Resonance & Resemblance: Sound Perspectives of a Pluralistic World" (PhD diss., University of California, San Diego, 2020), ProQuest (27665908); Kyle Bates, "Three Engrams: Human and Mechanical Memory: Temporality in Experimental Electronic Composition" (MFA thesis, Mills College, 2021), ProQuest (28539974).

the larger discussion of listening outlined above: listening as relational, multi-sensory, determined by the individual, and with the more-than-human world.

#### Selected Artists for Case Studies

Some artists incorporate Deep Listening into their creative practices, while others embrace alternative philosophies of listening separate from it. I analyze such sonic art of Ximena Alarcón Díaz, Tina Mariane Krogh Madsen, and Suzanne Kite. All are artist-researchers and therefore present recent writings about their work, which I use as primary sources. However, reviews of certain works by others are scarce. I address this by providing in-depth readings and analyses in this dissertation, informed by interviews with each of them. As a listener, I am afforded a certain level of distance distinct from what they experience, enabling a different perspective.

Artist-researcher Ximena Alarcón Díaz writes extensively about her projects in English and Spanish as both sole and co-author. Her 2007 dissertation “An Interactive Sonic Environment Derived from Commuters’ Memories of the Soundscape: A Case Study of the London Underground” is insightful for showing her conceptions of listening before learning about Deep Listening.<sup>166</sup> I reference her writings and presentations “Networked Migrations: listening to and performing the in-between space” (2014), “On Dis-location: Listening and Re-composing with Others” (2017), “Embodied Sonic Memories of Commuting Underground” (2017), “INTIMAL: Walking to feel place, breathing to feel presence” (2019), “Sonic Proximities: Locating Oneself and the Others Within a ‘Migratory Journey’” (2022), and others to understand how she approaches the

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<sup>166</sup> Ximena Alarcón Díaz, “An Interactive Sonic Environment Derived from Commuters’ Memories of the Soundscape: A Case Study of the London Underground” (PhD diss., De Montfort University, 2007), <https://core.ac.uk/download/pdf/228183973.pdf>.

key themes of embodied movement and migration present throughout her work.<sup>167</sup>

Alarcón Díaz is intimately involved in the Deep Listening community, reflecting on interactions with Oliveros in “Pauline Oliveros: A Shared Resonance,” recounting about her experiences as on the invited talk “Migrations: resonances that hold us ...” and Listening to the In-Between podcast, and contributing essays and scores in collections like *Deep Listening Anthology* and *Spell Breaking*.<sup>168</sup> She also develops websites for her larger projects, like INTIMAL, that include background, publications, community sections, and blogs.<sup>169</sup>

Performance artist Tina Mariane Krogh Madsen also maintains a comprehensive online record of their artistic output through recorded presentations, class and residency descriptions, written publications, scores, and performance documentation. I consult their

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<sup>167</sup> Ximena Alarcón, “Networked Migrations: listening to and performing the in-between space,” *Liminalities* 10, no. 1 (May 2014), <http://liminalities.net/10-1/networked-migrations.html>; Ximena Alarcón, “On Dis-location: Listening and Re-composing with Others,” *Reflections on Process in Sound* 5 (Autumn 2017): 24–37; Ximena Alarcón, “Embodied Sonic Memories of Commuting Underground,” *IA, the Journal of the Society for Industrial Archeology* 43, no. 1/2 (2017): 81–92; Ximena Alarcón Díaz, Victor Evaristo Gonzalez Sanchez, and Çağrı Erdem, “INTIMAL: Walking to feel place, breathing to feel presence,” Proceedings of the International Conference on New Interfaces for Musical Expression, June 3–6, 2019, [https://www.nime.org/proceedings/2019/nime2019\\_paper047.pdf](https://www.nime.org/proceedings/2019/nime2019_paper047.pdf); Ximena Alarcón Díaz, “Sonic Proximities: Locating Oneself and the Others Within a ‘Migratory Journey,’” *Journal of Network Music and Arts* 4, no. 1 (2022): 1–11.

<sup>168</sup> Alarcón and Herrema, “Pauline Oliveros: A Shared Resonance,” 7–10; Joep Christenhusz, host, *Listening to the In-Between*, podcast, season 3, episode 21, “Part I: Introducing Pauline Oliveros and Deep Listening,” Radio ArtEZ, September 19, 2022, <https://studiumgenerale.artez.nl/nl/studies/all/listening+to+the+in+between+part+1+introducing+pauline+oliveros+and+deep+listening>; Ximena Alarcón, “Sonic Migrations: resonances that hold us as we walk through telematic rituals,” talk, October 24, 2022, posted December 7, 2022, by Royal Conservatoire, YouTube, <https://www.youtube.com/watch?v=7UxdYwjZG1c>; Ximena Alarcón, “Roots,” in *Deep Listening Anthology II: Scores from the Community of Deep Listeners*, ed. Marc Jensen (Kingston, NY: Deep Listening Publications, 2010); Ximena Alarcón, “You are Naked!” in *Spell Breaking: Remembered Ways of Being*, ed. Carole Ione (Kingston, NY: Deep Listening Institute, 2013); Ximena Alarcón, “Suelo Fertil: anew born,” in *Spell Breaking 2: Listening from the Dreaming Heart*, ed. Carole Ione (Kingston, NY: Deep Listening Publications, 2018). See also Ximena Alarcón, “Secreto a Voces [An Open Secret]” for *Pauline Oliveros – Still Listening* (2017), <http://stilllisteningoliveros.com/secreto-voces-open-secret/>.

<sup>169</sup> “INTIMAL: Interfaces for Relational Listening,” INTIMAL, 2024, <https://intimal.net>.

writings “A Distributed Body: Non-binary Becoming Through Sound” (2021), “A Liminal Body of Performative Becoming” (2022), and “Kropsresonans (Danish, body-resonance)” (2024) for explanations of the theoretical foundations and research for their art.<sup>170</sup> Their personal website houses helpful information about and documentation of their artistic research, and they set up project websites I refer to as well.<sup>171</sup>

Multimedia installation artist and composer Suzanne Kite (who goes by Kite artistically) explores Lakḥóta ontologies to understand relationships with the world, including machine learning. Her multiple artist talks, such as “Shaping the Past: Reflections on Dreaming and Black and Indigenous Futures” with Alisha Wormsley (2020), “Roving Studio Triptych with Artist Kite” (2022), and “Nonhuman Futures” (2024), aid me in understanding her positionality and inspiration, as do her co-authored articles “Making Kin with Machines” (2018) and “It’s Not Done through Our Spirit, It’s Done through Our Mind” (2019).<sup>172</sup> Further, her dissertation “Hél čhaṅkú kiṅ ḥpáye

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<sup>170</sup> Tina Mariane Krogh Madsen, “A Distributed Body: Non-binary Becoming Through Sound,” paper presented at Deleuze & Guattari Studies Camp and Conference, Prague, Czech Republic, July 6, 2021, <https://research.aalto.fi/en/activities/a-distributed-body-non-binary-becoming-through-sound>; Tina Mariane Krogh Madsen, “A Liminal Body of Performative Becoming,” in *Taboo – Transgression – Transcendence in Art & Science 2020 Conference Proceedings*, ed. Dalila Honorato, Ingeborg Reichle, María Antonia González Valerio, and Andreas Giannakoulopoulos (Corfu, GRC: Ionian University Publications, 2022), 278–287;

<sup>171</sup> “Artistic Research,” TMKM, 2024, <https://tmkm.dk/ArtisticResearch/>. See “performance | [paer-‘for’-mans] protocols | [proe-to-‘koels’],” Performance Protocols, 2019–2020, <https://performance-protocols.net>.

<sup>172</sup> Alisha Wormsley and Suzanne Kite, “Shaping the Past: Reflections on Dreaming and Black and Indigenous Futures,” artist talk, October 21, 2020, posted November 11, 2020, by Goethe-Institut Montreal, YouTube, [https://www.youtube.com/watch?v=ObF\\_8GFjv14](https://www.youtube.com/watch?v=ObF_8GFjv14); Suzanne Kite, “Roving Studio Triptych with Artist Kite,” talk, February 26, 2022, posted March 1, 2022, by USC Visions and Voices, YouTube, <https://www.youtube.com/watch?v=DEtJn08EMM>; Suzanne Kite, “Nonhuman Futures,” talk for The Center for Deep Listening, virtual, March 20, 2024; Jason Edward Lewis, Noelani Arista, Archer Pechawis, and Suzanne Kite, “Making Kin with the Machines,” *Journal of Design and Science* (July 16, 2018); Suzanne Kite and Mahpiya Nážin, “It’s Not Done through Our Spirit, It’s Done through Our Mind,” *South as a State of Mind* 11 (Fall/Winter 2019).

(There lies the road): How to Make Art in a Good Way” (2023) provides depth to her artistic background and creative practice.<sup>173</sup> Her website houses links to these resources, other talks, performance videos, and additional materials as well.<sup>174</sup>

Online presence, anchored by personal websites and video or audio documentation, offers information on all of the selected artists. Their websites allow them to curate their presentation, though secondary sources and musicological discussion are sparse. I use supplementary interviews and communication with these artists and personal reflections on experiencing their work to flesh out the existing information and address gaps in scholarship. Chapter 5 seeks to reduce gaps through analysis of these artists’ ideas and works.

## **Methodologies**

In this dissertation, I review definitions and concepts of sound and listening inspired by Deep Listening while also studying its underexplored foundations. I investigate the act of listening and its multiple forms through readings of various pieces by artists associated with Deep Listening. I consider questions such as: how are sound and listening historically understood or misunderstood? What can humans learn from listening to, with, and as other entities? What attitudes and actions may such forms of listening prompt? How are artists contending with these types of questions, and how might humans experience art in dialogue with other entities? Since listening is subjective

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<sup>173</sup> Suzanne Kite, “Hél čhaŋkú kiŋ ħpáye (There lies the road): How to Make Art in a Good Way” (PhD thesis, Concordia University, 2023), [https://spectrum.library.concordia.ca/id/eprint/992013/1/Kite\\_PhD\\_S2023.pdf](https://spectrum.library.concordia.ca/id/eprint/992013/1/Kite_PhD_S2023.pdf).

<sup>174</sup> “Kite,” Kite, 2023, <http://kitekitekitekite.com>.

and individualized, the full spectrum of its possibilities cannot be covered in the framework of this dissertation. Instead, the focus will be on Deep Listening and its contexts. The dissertation's title references both deep listening generally and Deep Listening specifically to encompass this range. That listening is experienced in nuanced ways is part of its appeal and welcomed.

I rely on a range of methods to gather and process information, all with a dependency on experiential research (akin to Elisabeth Le Guin's carnal musicology) and Deep Listening itself as a methodology, a perspective uncommon in musicological discourse. I examine existing writings and publications in musicology, ecomusicology, sound studies, acoustic ecology, ecofeminism, sound art, embodiment, disability studies, and phenomenology. Materials range from books, articles, digitized archival documents, scores, blogs, artist websites, recordings, and performances (both in person and virtual).

Employing autoethnography, I recognize and consciously consider my own listening practice. I have been involved in the Deep Listening practice and community since 2018. I completed two online Deep Listening intensives, earning certification in 2020, and this training uniquely equips me to expertly approach Deep Listening scores and bridge the gap between musicology and Deep Listening scholarship. The modalities inform my everyday routines, such as continuing to practice the dream reflections I learned during training. Because embodied experiences are integral to my dissertation, I also keep a movement practice alongside Deep Listening, namely in yoga, Tai Chi, and Bartenieff Fundamentals. Further, I maintain a regular meditation practice in stationary and mobile capacities, typically spanning from five minutes to two hours in both guided

and unguided formats. These practices allow “working from insider knowledge,”<sup>175</sup> and such autoethnography further aligns with my goal to offer various ways of listening. Maintaining a personal listening practice not only reflects the key aspects of the dissertation, it also cultivates a sensitivity I can bring to my research approach, interpretations of pieces, interpersonal interactions in interviews, and writing.

At various stages I employed phenomenological reductions to better understand my own positioning and biases to this topic. I acknowledge that my lived experience as a white, cisgender, able-bodied woman trained in music and Deep Listening with an interest in environmental sustainability reflects certain privileges and impacts how I approach this research. I primarily use interpretive analysis and hermeneutic phenomenology to include reflection of lived experiences. Investigations into the meanings of concepts – such as sound, silence, listening, listeners, and embodiment – inform how I approach the interviews, feedback, and examples and help highlight patterns. Further, Monson’s perceptual agency aids me in exploring an artist’s intentions for listeners and a listener’s experiences. A vibration-centered, feminist, Deep Listening, care-based framework (further outlined below) informs my understanding of environmental and embodied listening. In recognizing this, I offer what Oliveros calls “quantum listening” and what Peter Szendy refers to as “making a listening listened to,” acknowledging that I write in a way that reflects my experiences.<sup>176</sup> By reading my dissertation, readers can join in listening to my listening. Likewise, I have listened to

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<sup>175</sup> Tony E. Adams, Carolyn Ellis, and Stacy Linn Holman Jones, eds., *Handbook of Autoethnography* (New York, NY: Routledge, 2016), 32. Italicized in original.

<sup>176</sup> Pauline Oliveros, “Quantum Listening: From Practice to Theory (to Practice Practice),” *SoundArtArchive*, December 1999, <https://s3.amazonaws.com/arena-attachments/736945/19af465bc3fc3c8d5249713cd586b28.pdf>; Szendy, *Listen*, 5–6.

others' listening and in doing so have noticed patterns and underlying factors that make their listening uniquely theirs.

Due to my emphasis on relationships in this dissertation, I am inspired by the “listening with” methodology as presented by Marina L. Peterson and Vicki L. Brennan in their article “A Sonic Ethnography: Listening to and with Climate Change” (2020).<sup>177</sup> “Listening with” describes listening as process, relational, ordinary, and uncertain.<sup>178</sup> The influence of Feld’s acoustemology is clear, and “[l]istening *with* as a methodological stance emphasizes the relational position of the ethnographer [as] we listen with others, amplifying our own situatedness as well as the perspectival quality of experience.”<sup>179</sup> The intention of “listening with” aligns with my aims to frame listening as process and relational, especially when listening with the more-than-human world. Expanding on their ethnographic focus, I investigate how certain artists “listen with.”

I also chose to reference ecofeminist philosophy, as Von Glahn and Feisst have, due to its consideration of relationships between genders, environments, and experiences.<sup>180</sup> It is important to acknowledge that there are a variety of approaches, terms, and thoughts within ecofeminism. For this dissertation, I reference specifically Carolyn Merchant’s “partnership ethic.” As Merchant explains, “It is an ethic based on

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<sup>177</sup> Marina L. Peterson and Vicki L. Brennan, “A Sonic Ethnography: Listening to and with Climate Change,” *Resonance* 1, no. 4 (Winter 2020): 371–375.

<sup>178</sup> The authors highlight listening with technology as well.

<sup>179</sup> Peterson and Brennan, “A Sonic Ethnography,” 372. Italics in original.

<sup>180</sup> Denise Von Glahn, *Music and the Skillful Listener: American Women Compose the Natural World* (Bloomington, IN: Indiana University Press, 2013); Sabine Feisst, “Negotiating Nature and Music through Technology: Ecological Reflections in the Works of Maggi Payne and Laurie Spiegel,” in *Current Directions in Ecomusicology: Music, Culture, Nature*, ed. Aaron Allen and Kevin Dawe (New York, NY: Routledge, 2015), 245–257.

the idea that people are helpers, partners, and colleagues and that people and nature are equally important to each other. If both people and nature are acknowledged as actors, we have the possibility of a mutually beneficial situation.”<sup>181</sup> Despite the prevalence of binaries present in Merchant’s writings (which I strive to work against<sup>182</sup>), the concept of care – defined as protecting and providing what is needed<sup>183</sup> – provides a way to consider outcomes of expansive environmental listening.

Merchant notably employs language such as voices and being heard to describe this partnership ethic. She references philosopher David Abram in recognizing the limits of language to describe the relationship between humans and the more-than-human world (or self and other), and I argue that sound and listening help address this barrier, in line with Lisbeth Lipari’s ethics of attunement and Jeff Todd Titon’s sound ecology.<sup>184</sup> The tool of written narrative that Abram and Merchant propose can similarly be accomplished

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<sup>181</sup> Carolyn Merchant, *Reinventing Eden: The Fate of Nature in Western Culture*, 2nd ed. (New York, NY: Routledge, 2013), 191.

<sup>182</sup> A related philosophy working outside such binary difference is queer ecology, “a loose, interdisciplinary constellation of practices that aim, in different ways, to disrupt prevailing heterosexist discursive and institutional articulations of sexuality and nature, and also to reimagine evolutionary processes, ecological interactions, and environmental politics in light of queer theory.” Catriona Sandilands, “Queer Ecology,” in *Keywords for Environmental Studies*, ed. Joni Adamson, William A. Gleason, and David N. Pellow (New York, NY: New York University Press, 2016), 169. See also Timothy Morton, “Guest Column: Queer Ecology,” *Publications of the Modern Language Association of America* 125 (2010): 273–282; Sri Varshni Muthukrishnan and Sunitha Venugopal, “On Inclusive Ecology Interconnects ‘Nature’ And ‘Queer’: From Eco Feminism to Queer Ecology A New Theoretical View,” *Revista de Gestão Social e Ambiental* 18, no. 1 (2024): e04944.

<sup>183</sup> *Cambridge Dictionary*, “care,” 2025, <https://dictionary.cambridge.org/us/dictionary/english/care>; *Britannica Dictionary*, “care,” 2025, <https://www.britannica.com/dictionary/care>.

<sup>184</sup> Lisbeth Lipari, *Listening, Thinking, Being: Toward an Ethics of Attunement* (University Park, PA: Pennsylvania State University Press, 2015); Jeff Todd Titon, *Toward a Sound Ecology: New and Selected Essays* (Bloomington, IN: Indiana University Press, 2020).

by listening directly to an environment, engaging in a guided listening piece, or, to some extent, listening to a recording of a piece. In this way, sound can facilitate relationships.

To choose examples for close readings in this vein, I initially surveyed the fields of experimental music, soundscape composition, and sound art looking for evidence, either explicit or implied, of listening across bodies, species, and entities. By studying online Deep Listening community groups, artist statements, and gallery descriptions and reviews, I narrowed the pool to those who mention the influence of or critique Deep Listening. I then examined the art and related materials (such as program notes and event announcements) to determine which artists consistently and sensitively investigate similar questions to those I posed in the opening of this methodologies section.

I also looked for connections with ecofeminist philosophies. Additionally, in discussing alternative ways of listening, I felt strongly about including the perspectives of those historically less represented. I recognize intersectionality, which accounts for experiences marked by complex identities. The selected artists and works, indebted to or outside of Deep Listening, all create space to facilitate listening and sounding between species and bodies which are often othered. I feature living artists as case studies to facilitate conversations as part of my research. To embrace the diversity of individual listening practices that inform creative practice, I conducted interviews with ten key figures: Stuart Dempster, Heloise Gold, Tomie Hahn, Tom Bickley, Björn Eriksson, Michael Reiley, Stephanie Loveless, Ximena Alarcón Díaz, Tina Mariane Krogh Madsen, and Suzanne Kite. The interviews provide input from voices in the larger Deep Listening community, a perspective often missing from discussions of the practice in musicology, which tend to focus on Oliveros alone and not the growing network.

Because I was unable to attend live performances of certain works discussed, I cannot speak to how sounds moved through or were felt in the spaces. However, relying on video and audio recordings pressed me to examine artists' relationships with audio and playback technologies, which has been crucial in their listening developments and strongly contributed to my findings. This limitation also helped me critically reconsider my own embodied experience of recorded sound and further framed how I conducted in-person performances of text scores with an expansive listening. I hear the case studies' pieces – and even the act of listening itself – as an open, or ecological, system “that incorporate[s] the flow of matter, energy, and information across boundaries.”<sup>185</sup> In the case of sound art and music based on text or verbal instructions, elements of indeterminacy may contribute to an open network, particularly through the flow of energy and sound across boundaries. This is especially true if the more-than-human world, understood in terms of chaos or complexity theory as defined by Merchant,<sup>186</sup> is one of the (albeit involuntary) participants in the listening and sounding process.

### **Overview of Chapters**

The following chapters narrow in scope and focus on details, providing clarity on the research progression, showing how topics are interconnected, and setting up important information needed for the case studies. Chapter 2 provides a historical overview of sound and listening concepts to later position Oliveros's artistic journey toward Deep Listening and the evolution of the practice to understand its varied

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<sup>185</sup> Merchant, *Reinventing Eden*, 195.

<sup>186</sup> Merchant, *Reinventing Eden*, 175-190.

influences. I then survey listening to and with the more-than-human world in Indigenous practices and Western classical concert cultures before moving to sections on sounds' spatial qualities and listening to bodies and entities.

This leads to Chapter 3 with a focus on listening as a means to increase awareness of relationships with environments. I discuss *dadirri*, a method of Aboriginal deep listening associated with elder, artist, and activist Miriam-Rose Ungunmerr-Baumann. I then highlight cultural trends important for understanding Oliveros's music and provide a chronological overview of Oliveros's early life and significant experiences that helped develop Deep Listening. Chapter 4 continues the discussion of Deep Listening, highlighting Oliveros's significant collaborations with the Deep Listening Band, Ione, and Gold. The three Deep Listening modalities of listening, dreaming, and sounding are discussed in detail. The chapter ends by pointing to continued efforts in the Deep Listening community, namely by the Center for Deep Listening at Rensselaer Polytechnic Institute.

Many artists and creatives inspired by Deep Listening use their work to further consider listening methods that embrace the more-than-human world. Chapter 5 focuses on select artists and practices as case studies and situates them in the context of Chapters 2 through 4. Deep Listening teacher Ximena Alarcón Díaz studies experiences of migration, and her INTIMAL project (2017–2024) blends software, listening, breathing, and walking to highlight migrant stories and grow awareness of environments. Tina Madsen's artistic research and practice focus on site-specificity and body interactions, and they consider stone collaborators for their project *The Voices of Stones* (2020). I also discuss scores by Alarcón Díaz and Madsen from *A Year of Deep Listening*

(2025) as examples of their Deep Listening work and influence. Kite is not a Deep Listener but cultivates a listening practice specifically informed by her Lakhóta heritage in works like *Listener* (2018) and *Wógligleya (Thųjkášila Čěčiyelo)* (2021) where dreams are sonically realized in musical performance.

Chapter 6 provides final thoughts, especially on the overlooked prominence of the dream modality for environmental connections. Importantly, I contribute a new look at Deep Listening as an ongoing and evolving enterprise, offering a much-needed perspective on key features and figures. I also address limitations and lacunas in the Deep Listening practice and research.

## CHAPTER 2

### MUSIC AND ENVIRONMENTS:

#### DEEP LISTENING'S PREDECESSORS AND CONTEXTS

Studies show that listening to the more-than human is often a fundamental part of how indigenous people relate to the land and its many non-human inhabitants. While some of the listening is done with the ears, this kind of listening is often multi-sensorial, also including the visual, smells, vibrations and touch. In addition, dreams, stories and songs may convey knowledge of and from the more-than-human.<sup>1</sup>

Various understandings of sound and listening abound across cultures, and this chapter serves to set the stage specifically for Deep Listening theories and practices, considering multiple approaches to music, listening, and environments preceding and impacting the work of Pauline Oliveros and other key figures in the Deep Listening movement. Connections between Oliveros, acoustic ecology, and acousmatic music traditions have been explored by other scholars,<sup>2</sup> and my purpose in this chapter is to establish a broader foundation for understanding Deep Listening and its current artists. I focus on traditional knowledge, recording technologies, and listening bodies to reflect

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<sup>1</sup> Sam Staddon, Anja Byg, Mollie Chapman, Robert Fish, Alice Hague, and Katie Horgan, "The Value of Listening and Listening for Values in Conservation," *People and Nature* 5 (2023): 350. The original quote references Bawaka Country, Sarah Wright, Sandie Suchet-Pearson, Kate Lloyd, Laklak Burarrwanga, Ritjilili Ganambarr, Merrkiyawuy Ganambarr-Stubbs, Banbapuy Ganambarr, Djawandil Maymuru, and Jill Sweeney, "Co-Becoming Bawaka: Towards a Relational Understanding of Place/Space," *Progress in Human Geography* 40, no. 4 (2016): 455–475; Julie Cruikshank, "Glaciers and Climate Change: Perspectives from Oral Tradition," *Arctic* 54, no. 4 (2001): 377–393; Deborah McGregor, "Mino-Mnaamodzawin: Achieving Indigenous Environmental Justice in Canada," *Environment and Society* 9, no. 1 (2018): 7–24; David George Haskell, *The Songs of Trees: Stories from Nature's Great Connectors* (New York, NY: Penguin Books, 2017); Tim Ingold and Terhi Kurtilla, "Perceiving the Environment in Finnish Lapland," *Body & Society* 6, no. 3–4 (2000): 183–196; Tim Ingold, "Dreaming of Dragons: On the Imagination of Real Life," *Journal of the Royal Anthropological Institute* 19, no. 4 (2013): 734–752.

<sup>2</sup> Maja Bjelica, "The Ethics of Deep Listening: A Practice for Environmental Awareness," *The Polish Journal of Aesthetics* 64, no. 1 (2022): 37–56; Daniel Eduardo Quaranta and Pedro Leal David, "Revisiting Pauline Oliveros: Some Reflections on Listening and a Retrieved Interview," *Resonance* 5, no. 2 (Summer 2024): 155–173; Eric Leonardson, "Acoustic Ecology and Ethical Listening," Center for Humans and Nature, April 28, 2014, <https://humansandnature.org/acoustic-ecology-ethical-listening/>.

elements significant for the Deep Listening discussion and to develop context for later chapters.

In this chapter, I first survey ideas and practices of listening to and with environments developed through the early twentieth century. Then I examine how select composers have listened to sounds and spaces in novel ways and reflected their experiences in experimental, electroacoustic, and soundscape compositions informed by a keen awareness of acoustic spaces. Thereafter, I investigate listening to human and nonhuman bodies and entities. These three sections of historical environmental listening, sound's spatial qualities, and listening to the more-than-human world highlight overlap at the juncture of these diverse but related areas, which is critical for my new situating of Deep Listening. Throughout this chapter, I trace how musicians approach relationships between their sonic environments and listening experiences in highly conscious and creative ways, to be applied to Deep Listening artists in later chapters.

“Environment” is a complex term with various meanings. I refer to it as “the surroundings or conditions in which a person, animal, or plant lives or operates.”<sup>3</sup> An external environment “consists of all, or any, of the following media, namely, the air, water and land; and the medium of air includes the air within buildings and the air within other natural or man-made structures above or below ground.”<sup>4</sup> Within a body, an

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<sup>3</sup> *Oxford Languages*, “environment, 1,” accessed February 6, 2025, <https://www.google.com/search?q=environment+definition>.

<sup>4</sup> UK Environmental Protection Act 1990, Part I, Section 1 in Andrew Porteous, *Dictionary of Environmental Science and Technology*, 4th ed. (Hoboken, NJ: John Wiley & Sons, 2008), 250.

internal environment may encompass neurological, anatomical, and physiological mechanisms that are informed by the external environment.<sup>5</sup>

Environments contain ecosystems – groups of mutually dependent organisms and their habitats – and ecology is the study of relationships within these ecosystems.<sup>6</sup> In regards to other organisms’ experiences in such ecosystems, Jakob von Uexküll’s concept of Umwelt (an organism’s “perceptual life-world”) is helpful for recognizing the subjective more-than-human perspective.<sup>7</sup> Further, *The Environment Dictionary*’s explanation is particularly insightful for my framing of environments with listening:

[It is a] combination of the various physical and biological elements that affect the life of an organism. Although it is common to refer to “the” environment, there are in fact many environments ... but all intimately linked and in combination constituting the whole earth/atmosphere system. They vary in scale from microscopic to global and may be subdivided according to their attributes.<sup>8</sup>

Such definitions suggest inclusivity, pluralities, and relationships, aspects relevant to Deep Listening, a practice that focuses on sonically engaging with various environments.

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<sup>5</sup> Antonio De Fano, Rotem Leshem, and Tal Dotan Ben-Soussan, “Creating an Internal Environment of Cognitive and Psycho-Emotional Well-Being through an External Movement-Based Environment: An Overview of Quadrato Motor Training,” *International Journal of Environmental Research and Public Health* 16, no. 12 (2019): 2160.

<sup>6</sup> David Kemp, *The Environment Dictionary* (New York, NY: Taylor and Francis, 2002), 115, 117, 182.

<sup>7</sup> Dorion Sagan, introduction to *Foray into the Worlds of Animals and Humans: With A Theory of Meaning*, by Jakob von Uexküll (Minneapolis, MN: University of Minnesota Press, 2010), 2.

<sup>8</sup> Kemp, *The Environment Dictionary*, 127.

## Listening to and with Environments

### Established Practices and Traditional Knowledge

Human listening has been marked by creative interactions with sonic environments for thousands of years, particularly through awareness of animal calls and songs. Some accounts suggest that early hominid music functioned as socially unifying among communities, and humans adopted animal activities and behaviors, including their music.<sup>9</sup> Hunters, herders, and shamans may rely on their personal sonic knowledge of local habitats to communicate with and/or imitate environmental sounds. For example, distinct herding calls like kulning by Scandinavian shepherdesses and yodeling by Alpine herders are used to call and lead roaming flocks across large distances. Similarly, Mongolian herding communities base their singing on the sounds of female sheep, goats, cows, and horses to encourage bonding between mothers and their young.<sup>10</sup> They may also use songs to communicate with animal spirits.<sup>11</sup> Reproducing animal sounds requires careful listening to the more-than-human world and acute observation of behaviors, which are important characteristics also found in Deep Listening.<sup>12</sup>

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<sup>9</sup> Thomas Geissmann quoted in Holly Watkins, “Music Between Reaction and Response,” *Evental Aesthetics* 2, no. 2 (2013): 90; Hollis Taylor, “How Musical Are Animals? Taking Stock of Zoömusicology’s Prospects,” *Music Research Annual* 1 (2020): 8.

<sup>10</sup> Emily Doolittle, “Crickets in the Concert Hall: A History of Animals in Western Music,” *Trans-Cultural Music Review* 12 (2008), <http://www.sibetrans.com/trans/articulo/94/crickets-in-the-concert-hall-a-history-of-animals-in-western-music>. For other herding song examples, see the brief overview in Jack William Harrison, “Two Left Feet: A Study of Multispecies Musicality in British Women’s Sport” (PhD diss., University of Toronto, 2021), 33, 37, ProQuest (28714447).

<sup>11</sup> Doolittle, “Crickets in the Concert Hall.”

<sup>12</sup> For a discussion of animals as mediators, see Jody Berland, “Assembling the (Non)Human: The Animal as Medium,” *Imaginations* 8, no. 3 (2017): 139–152.

This type of listening has strong ties with traditional knowledge (TK) and traditional ecological knowledge (TEK), also called Indigenous ecological knowledge or Indigenous knowledge (IK).<sup>13</sup> Though these terms are used in different ways, they can be generally understood as “a cumulative body of knowledge and beliefs, handed down through generations by cultural transmission, about the relationship of living beings (including humans) with one another and with their environment.”<sup>14</sup> Such knowledge can show an understanding of ethics mutually beneficial to the land and its inhabitants. As sustainability advocates highlight, humans’ “relationship to nature must be based on something other than use.”<sup>15</sup> From living *with* the land, Indigenous knowledge may help people appreciate “the natural world as a vital participant and co-creator of community”<sup>16</sup> without separating humans and their environments. Oliveros similarly benefitted from diverse cultural practices to enrich her understanding of environments and relationships, as will be discussed in later chapters. The land is a source of both sustenance and knowledge, and many Indigenous sciences, histories, and stories reflect this philosophy.

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<sup>13</sup> Julian T. Inglis, ed., *Traditional Ecological Knowledge: Concepts and Cases* (Ottawa, CAN: International Program on Traditional Ecological Knowledge and International Development Research Centre, 1993), 3.

<sup>14</sup> Inglis, *Traditional Ecological Knowledge*, 3.

<sup>15</sup> Dan Shilling, “Introduction: The Soul of Sustainability,” in *Traditional Ecological Knowledge Learning from Indigenous Practices for Environmental Sustainability*, ed. Melissa K. Nelson and Dan Shilling (Cambridge, ENG: Cambridge University Press, 2018), 11.

<sup>16</sup> Gregory Cajete, “Native Science and Sustaining Indigenous Communities,” in *Traditional Ecological Knowledge Learning from Indigenous Practices for Environmental Sustainability*, ed. Melissa K. Nelson and Dan Shilling (Cambridge, ENG: Cambridge University Press, 2018), 19.

By studying certain cultures and bodies of knowledge, we can, in turn, listen to and learn from the land and its inhabitants.<sup>17</sup>

Further, Indigenous concepts of time based in the land often inform theories of sound and listening, as we will see with dadirri in Chapter 3 and Kite's reliance on Lakhóta ontologies in Chapter 5. Rather than linear, some Indigenous communities understand time as cyclical. For Australian "Aboriginal people, time is multidimensional and can be described: 'as a pond you can swim through – up, down, around'."<sup>18</sup> This use of an environmental metaphor to describe humans' understanding of time is significant as dynamic relationships between entities and their surroundings suggest that time is reflective of changes in these relationships and seasons.<sup>19</sup> Multiple Aboriginal concepts of environmental listening inform daily life, dependent on location and community, including Caber-ra-Nunga, Winangar guru, Gan'na, Kulini, Gulpa Ngawal, Molla Wariga, and dadirri. Likewise, Steven Feld outlines how the Kaluli people from the Bosavi region in Papua New Guinea contemplate "what's to be learned from taking seriously the sonic relationality of human voices to the sounding otherness of presences and subjectivities like water, birds, and insects."<sup>20</sup>

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<sup>17</sup> Warren Cariou, "Sweetgrass Stories: Listening for Animate Land," *Cambridge Journal of Postcolonial Literary Inquiry* 5, no. 3 (2018): 341.

<sup>18</sup> Aleksandar Janca and Clothilde Bullen, "The Aboriginal Concept of Time and Its Mental Health Implications," *Australasian Psychiatry* 11 Supplement (2003): S41.

<sup>19</sup> See Geneviève Reid and Renee Sieber, "What is Time? Indigenous Conceptualizations of Time and the Geoweb," 2015, [http://rose.geog.mcgill.ca/ski/webfm\\_send/405](http://rose.geog.mcgill.ca/ski/webfm_send/405).

<sup>20</sup> Steven Feld, "Acoustemology," in *Keywords in Sound*, ed. David Novak and Matt Sakakeeny (Durham, NC: Duke University Press, 2015), 19.

“Traditional ecological knowledge is based on mutual well-being and sharing,”<sup>21</sup> and it therefore connects to ecofeminist ideas like Carolyn Merchant’s partnership ethic. For example, crops of corn, beans, and squash – recognized across different Nations as the Three Sisters – represent coexistence. These three species are planted together and serve one another in the growing process: corn stalks supply support for bean vines; bean roots deliver needed nitrogen to the soil; and squash, protected by the taller plant leaves, keep the soil moist, shade the beans, and deter other detrimental plants and insects. Though the variety of the Three Sisters may differ based on their location and community, the plants importantly supply a metaphor for understanding relationships, diversity, and multiplicity. Scientist Robin Kimmerer affirms, “Among the best teachers I know for guidance on pluralism and symbiosis are three wise and beautiful beings[,] ... the Three Sisters.”<sup>22</sup> The plants provide examples of the benefits of (bio)diversity. Kimmerer explains that the human gardener as the fourth sister is necessary for the crops to flourish<sup>23</sup> and provide nourishment for animals and humans.

Another scientist, Monica Gagliano, also discusses the role of gardeners. Researching plant intelligence, Gagliano specifically posits listening as a key tool for

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<sup>21</sup> Inglis, *Traditional Ecological Knowledge*, 16.

<sup>22</sup> Robin Wall Kimmerer, “*Mishkos Kenomagwen*, The Lessons of Grass: Restoring Reciprocity with the Good Green Earth,” in *Traditional Ecological Knowledge Learning from Indigenous Practices for Environmental Sustainability*, ed. Melissa K. Nelson and Dan Shilling (Cambridge, ENG: Cambridge University Press, 2018), 48.

<sup>23</sup> Robin Wall Kimmerer, *Braiding Sweetgrass: Indigenous Wisdom, Scientific Knowledge and the Teachings of Plants* (Minneapolis, MN: Milkweed Editions, 2013), 139–140. Kimmerer also discusses this in Ayana Young, host, *For the Wild*, podcast, episode 35 encore, “Robin Wall Kimmerer on Indigenous Knowledge for Earth Healing,” August 2, 2018, <https://forthewild.world/listen/robin-wall-kimmerer-on-indigenous-knowledge-for-earth-healing-35-encore>.

humans to observe environments, and she heralds gardeners as attentive listeners. She states,

[W]e are all capable of listening; gardeners are a good example. Gardeners are keen, attentive, they have this devotion toward their gardens. But fundamentally you need to spend time and listen. Listening doesn't just mean with your ears, but listening with the body and see, what is the space saying.<sup>24</sup>

Plants themselves are capable of emitting and receiving sound, although often outside the hearing range of humans. Researchers have shown that plants make and listen to sounds for various reasons, including survival and adaptation. Networks of trees, plants, fungi, and bacteria use sound signals to communicate in and about their environments and stimuli, such as needing water.<sup>25</sup> Tomato and tobacco plants, for instance, emit sounds when stressed by drought,<sup>26</sup> and the roots of corn plants make clicking sounds and selectively grow towards acoustic vibrations of water across distances.<sup>27</sup> Thus, plants and fungi should be in listening discussions. By listening to and observing the patterns and

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<sup>24</sup> Monica Gagliano, Marcelo Gleiser, and Richard Powers, "Plant Intelligence," talk, February 27, 2020, posted March 5, 2020, by Institute for Cross-Disciplinary Engagement at Dartmouth, YouTube, <https://www.youtube.com/watch?v=3-2A8EOHo08>.

<sup>25</sup> Doug Bonderud, "Can Plants Hear? The Science of Sound-Sensing Flora," Now, December 2, 2022, <https://now.northropgrumman.com/can-plants-hear-the-science-of-sound-sensing-flora/>. See also B.S. Steidinger, T.W. Crowther, J. Liang, M.E. Van Nuland, G.D.A. Werner, P. Riech, G.J. Nabuurs, S. de-Miguel, M. Zhou, N. Picard, B. Herault, X. Zhao, C. Zhang, D. Routh, K.G. Peay, and Global Forest Biodiversity Initiative, "Climatic Controls of Decomposition Drive the Global Biogeography of Forest Tree Symbioses," *Nature* 569, no. 7756 (May 16, 2019): 404–408.

<sup>26</sup> I. Khait, O. Lewin-Epstein, R. Sharon, K. Saban, R. Perelman, A. Boonman, Y. Yovel, and L. Hadany, "Plants Emit Informative Airborne Sounds under Stress," *bioRxiv* (December 2, 2019).

<sup>27</sup> Monica Gagliano, Mavra Grimonprez, Martial Depczynski, and Michael Renton, "Tuned In: Plant Roots Use Sound to Locate Water," *Oecologia* 184, no. 1 (2017): 151–160; "Talking Plants," The University of Western Australia, April 3, 2012, <https://www.news.uwa.edu.au/archive/201204034491/research/talking-plants>. See also Monica Gagliano, "Green Symphonies: A Call for Studies on Acoustic Communication in Plants," *Behavioral Ecology* 24, no. 4 (July 1, 2013): 789–96; Michael Marder, "Plant Intentionality and the Phenomenological Framework of Plant Intelligence," *Plant Signaling & Behavior* 7, no. 11 (November 2012): 1365–1372.

qualities of plants like the Three Sisters, humans can learn about their environments and potentially better understand them.

Listening to plants is a theme across Indigenous literature and scholarship. Kimmerer recounts her experience gathering trees with Potawatomi basket maker John Pigeon where individual trees must give their consent for harvesting, and the cutter listens to the tree and its surroundings for permission.<sup>28</sup> Scholar Warren Cariou comments on listening to sweetgrass, a vital plant in Indian Country cultures. He says that “the ‘listening’ Kimmerer writes about is generally not accomplished through the sense of hearing, but instead it most often happens in the realm of scent,”<sup>29</sup> making such listening a full-body and embodied experience and way of engaging with environments. For many, understanding the Earth as a gift means perceiving of certain plants, fungi, nonhuman animals, rocks, and others in the more-than-human world as “people.”<sup>30</sup> This is not an anthropomorphization of species but instead the recognition of equal status to understand one’s own position in relation to themselves and more-than-human environments. This view has ramifications for the practice of Deep Listening and how artists detect consent, which will be further explored in the next chapters.

#### Western Classical Concert Perspectives

Despite strong relationships with and inspiration from environments, Western classical composers and musicians, over the course of centuries, separated their performances from the outdoors. They tended to represent outdoor spaces and sounds

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<sup>28</sup> Kimmerer, *Braiding Sweetgrass*, 144.

<sup>29</sup> Cariou, “Sweetgrass Stories,” 345. See also Lindsey French and Alex Young, “Embodied Listening Practices and Ruderal Ecologies,” *Acoustic Ecology Review* 1, no. 1 (2023).

<sup>30</sup> Shilling, “Introduction,” 12.

instead in a filtered and polished fashion through tone painting for vocal and acoustic music to be played indoors. For example, Claude Daquin featured a cuckoo call in his *pièce de clavecin* “Le Coucou” (1735), Ludwig van Beethoven portrayed bird calls in his “Pastoral” Symphony No. 6 (1808), and Camille Saint-Saëns caricatured animals in *Le Carnaval des animaux* (1886). Noteworthy are also Olivier Messiaen’s many later bird-inspired compositions based on his close listening and painstaking transcriptions of bird calls and songs, although they are idealized portrayals. Composers stylized outdoor environmental sounds to fit within the musical structures and tastes of their time.

In the 1920s, new audio recording and playback technologies began to alter concert culture as outdoor sounds could enter the performance hall without instrumental adaptation. Famously, Ottorino Respighi incorporated a recording of a nightingale in his 1924 “I Pini del Gianicolo” (“The Pines of the Janiculum”), a tone poem from *Pini di Roma* (*Pines of Rome*). The pioneering inclusion of a realistic-sounding field recording into an orchestral work caused controversy and boos at the work’s premiere. However, composer Emily Doolittle argues that Respighi’s use of the nightingale songs “is little different than that of romantic era composers ... The birdsongs merely provide colour and fit into the programmatic world [of] his piece, but they do not alter the human structure of his music.”<sup>31</sup> Despite both the supposed break with and continuation of tradition, perhaps the strong reaction to bringing the outside indoors was in part due to a prevalent culture/nature binary that conditioned audiences to hear the nightingale as an “othered” nonhuman animal and as sonically displaced within the idealized instrumental presentation of outdoor environments. Other reasons could have been the disruption of

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<sup>31</sup> Doolittle, “Crickets in the Concert Hall.”

concert expectations, poor sound quality, and a perceived lack of originality from the composer.

Even as composers continued to rely on stylized more-than-human sounds to match Western music aesthetics, some musicians moved outside the concert hall. For example, in the 1920s, cellist Beatrice Harrison played programs with a nearby nightingale. While outdoor music performances were not new, hers stand out because Harrison intentionally responded to a broad range of environmental sounds. Although the nightingale's songs were framed in a Western music context and not on the bird's terms, they featured the unusual sonic interactions between the human and more-than-human surroundings in an example of interspecies music.<sup>32</sup>

### **Sound's Spatial Qualities**

Deep Listening follows a long legacy of musicians and artists keenly aware of their surroundings. Some composers in this legacy used recording and playback technologies and speaker placement to curate the listener experience. In this section I discuss the historical contexts and trends focused on spatial behaviors of sound, important for understanding Deep Listening's origins and environmental connections.

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<sup>32</sup> Interspecies music refers to intentional sonic interactions, sound communication, and music making between humans and nonhuman animals. See Francois-Bernard Mâche, *Music, Myth and Nature* (Chur, CHE: Harwood Academic Publishers, 1992); Dario Martinelli, ed., "Dossier: Zoomusicology," *Trans-Cultural Music Review* 12 (2008), <https://www.sibetrans.com/trans/published-issue/3/trans-12-2008>; Emily Doolittle, "Other Species Counterpoint: An Investigation of the Relationship between Human Music and Animal Songs" (PhD diss., Princeton University, 2007), ProQuest (3236172). More concepts and sources are outlined in Chapter 1 of this dissertation.

## Space and Spatialized Sound in Western Music Composition

Space and sound are connected phenomenologically and ontologically, making spatial awareness a key factor for listening to environments.<sup>33</sup> Humans have long been interested in the behaviors of sounds in spaces, evidenced by European Paleolithic-era cave drawings suggesting “correlations between the locations of rock drawings and strong acoustic resonances.”<sup>34</sup> Throughout the history of Western classical music, composers have carefully listened to and written pieces for specific spaces like cathedrals, relying on their acoustic signatures, as found in spatially separated responsorial and antiphonal practices since the medieval era.

In the nineteenth century, Hector Berlioz built on such approaches in his *Grande Messe des morts* Requiem (1837), in which he placed four brass ensembles throughout the Cathedral of St. Louis des Invalides in Paris at cardinal points and around the audience,<sup>35</sup> with an orchestra center stage.<sup>36</sup> He created an immersive environment of sound, commenting, “Many fail to recognize that the very building in which music is made is itself a musical instrument, that it is to the performers what the sound board is to the strings of the violin, viola, cello, bass, harp, and piano stretched above.”<sup>37</sup> Through

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<sup>33</sup> Andrew J. Eisenberg, “Space,” in *Keywords in Sound*, ed. David Novak and Matt Sakakeeny (Durham, NC: Duke University Press, 2015), 193.

<sup>34</sup> Braxton Boren, “History of 3D Sound,” in *Immersive Sound: The Art and Science of Binaural and Multi-Channel Audio*, ed. Paul Geluso and Agnieszka Roginska (New York, NY: Taylor and Francis, 2018), 41.

<sup>35</sup> Richard Zvonar, “A History of Spatial Music,” *Canadian Electroacoustic Community* 7, no. 4, [https://econtact.ca/7\\_4/zvonar\\_spatialmusic.html](https://econtact.ca/7_4/zvonar_spatialmusic.html).

<sup>36</sup> Cihan Işıkhan, “Spatial Sound Performances in Classical Music,” *IBAD Journal of Social Sciences* 6 (2020): 385–386.

<sup>37</sup> Hector Berlioz as quoted in Boren, “History of 3D Sound.”

physical distancing and natural resonances, as in Charles Ives's *The Unanswered Question* (1908; 1934) and Béla Bartók's *Music for Strings, Percussion, and Celesta* (1936), composers used acoustic instruments and voices to sonically map performance spaces. Later, "acoustic space and sound location [became] as dynamic as the sequence of notes in the composition"<sup>38</sup> in works by composers like Henry Brant, Iannis Xenakis, Pierre Boulez, and Oliveros. The Deep Listening Band also recognized this by performing not only in cathedrals but also cisterns, quarries, and caves.

John Cage was another pivotal figure who highlighted sound's spatiality by encouraging musicians and audiences to listen to their surroundings. His description of sound reflects the power of listening and an openness to all sounds, which he embraced throughout his career:

Wherever we are, what we hear is mostly noise. When we ignore it, it disturbs us. When we listen to it, we find it fascinating. The sound of a truck at fifty miles per hour. Static between the stations. Rain. We want to capture and control these sounds, to use them not as sound effects but as musical instruments.<sup>39</sup>

In the 1940s, he became enthralled with the idea of silence, particularly as it is understood in Indian aesthetics and Zen Buddhism, and he used it as a means to bring awareness to spaces. His planned but unrealized piece *Silent Prayer* consists of no conventional musical sounds for three to four-and-a-half minutes and later became the three-movement *4'33"* (1952) framing all the non-intentional sounds in a space as worth

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<sup>38</sup> Barry Blesser and Linda-Ruth Salter, *Spaces Speak, Are You Listening? Experiencing Aural Architecture* (Cambridge, MA: MIT Press, 2007), 166.

<sup>39</sup> John Cage, "The Future of Music: Credo," in *Silence: Lectures and Writings* (Middletown, CT: Wesleyan University Press, 1961), 3.

listening to. For Cage, “[s]ilence does not exist. One simply should listen and open one’s ears.”<sup>40</sup>

Later, Cage explored silence through electronic technology and amplification. The subsequent silent piece *0’00”* (1962) directs the performer to amplify (without feedback) an action. It serves to “refine and deepen [Cage’s] idea of silence,”<sup>41</sup> and along with framing everyday actions as music “By means of electronics, it has been made apparent that everything is musical.”<sup>42</sup> His piece *One<sup>3</sup>* (1989) further expands on the idea of silence by amplifying a room to the edge of feedback. Commenting on how the world had become louder, Cage stated, “I thought that silence had changed from what it was, and I wanted to indicate that.”<sup>43</sup> His explorations of sound and silence shed new light on listening to and in indoor and outdoor spaces rather than simply listening to music placed in a space. Oliveros met Cage in 1964 for a festival by the San Francisco Tape Music Center and participated in his orchestral work *Atlas Eclipticalis* (1961) which featured indeterminate music notation derived from star charts. She became deeply familiar with his music and aesthetic, even directly commenting on his influence, as in the notes for “From Unknown Silences” from *Four Meditations for Orchestra* (1996) about sound,

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<sup>40</sup> “Bird Cage,” John Cage Database of Works, 2016, [https://johncage.org/pp/John-Cage-Work-Detail.cfm?work\\_ID=17](https://johncage.org/pp/John-Cage-Work-Detail.cfm?work_ID=17).

<sup>41</sup> Sabine Feisst and Garth Paine, “Teaching Acoustic Ecology through John Cage’s *49 Waltzes for the Five Boroughs*,” in *Soundscape of Work and Play*, ed. Albert Mayr, Francesco Michi, and Stefano Zorzanello (Giulianova, ITA: Galaad Edizioni, 2021), 76.

<sup>42</sup> Richard Kostelanetz, *Conversing with Cage* (New York, NY: Routledge, 2003), 70.

<sup>43</sup> James Pritchett, “Silence Changed: One<sup>3</sup>,” *The Piano in My Life*, 2023, <https://rosewhitemusic.com/piano/2018/10/01/silence-changed-one3/>.

silence, and structure. She similarly listened for greater sonic awareness, both with and without recording technologies.

Cage's ideas and compositions greatly influenced numerous other artists who investigated how sounds interact with a space and its inhabitants. For example, Alvin Lucier explored the acoustics and resonances of various spaces as "One which gives back any sound that is put into it."<sup>44</sup> He "focus[es] on how the room, or interacting obstacles, push or pull the sounds. He gets the listener to appreciate how entwined music and the physical space it occupies are, and how the world sings to us if we're willing to listen."<sup>45</sup> Space is thus intentionally included as a participant in musical performance, similar to Oliveros's treatment of space as a collaborator.<sup>46</sup> This is exemplified by Lucier's piece *Vespers* (1969) in which participants navigate their environment via echolocation. He said, "I don't bring an idea of mine about composition into a space and superimpose it on that space, I just bring a very simple idea about a task that players can do and let the space push the players around."<sup>47</sup> Deep Listening artists Ximena Alarcón Díaz and Tina Madsen, discussed in Chapter 5, build on this compositional approach.

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<sup>44</sup> Anthony Mattana, "3D Audio Talks: Alvin Lucier," Hooke, October 18, 2016, <https://hookeaudio.com/blog/3d-audio-talks/alvin-lucier/>.

<sup>45</sup> Quote by Raphael Mostel in Allan Kozinn, "Music Reconceived as Acoustical Sculpture," *New York Times*, April 13, 1997, <https://www.nytimes.com/1997/04/13/arts/music-reconceived-as-acoustical-sculpture.html>.

<sup>46</sup> A. M. Devito, "Sonic Sentimentality and the Unification of the Listening Space: Exploring the Intersections of Oral History and Sonic Art," *Organised Sound* 26, no. 2 (2021): 280. See also Pauline Oliveros, "Acoustic and Virtual Space as a Dynamic Element of Music," *Leonardo Music Journal* 5 (1995): 19–22.

<sup>47</sup> Alvin Lucier and Douglas Simon, *Chambers: Scores by Alvin Lucier* (Middletown, CT: Wesleyan University Press, 1980), 24.

Lucier often commented on how environments related to his compositions. For instance, he had an affinity for the natural resonance of spaces and reframed electronic technological sounds as part of the modern landscape.<sup>48</sup> In *Chambers* (1968), Lucier asks performers to “Collect or make large and small resonant environments,” and he explained, “what I discovered was that by concentrating on the pitches and timbres of the conch shells, the environmental sounds – buses, trucks, people talking, other urban sounds – got perceived in terms of the sounds of those shells.”<sup>49</sup> About his landmark work *I Am Sitting in a Room* (1969) he said, “Thinking of sounds as measurable wavelengths, instead of as high or low musical notes, has changed my whole idea of music from a metaphor to a fact and, in a real way, has connected me to architecture.”<sup>50</sup> Lucier shared an interest in listening to and interacting with spaces with Oliveros, whom he knew well. They appeared on concert programs together and also attempted to use natural radio signals for a live version of Lucier’s piece *Whistlers* (1966).<sup>51</sup>

Listening to spaces and transforming the sounds was also a key focus for Maryanne Amacher’s creative practice. She stated, “How certain sounds are to be perceived in a sonic world becomes as important as the sounds themselves”<sup>52</sup> and she

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<sup>48</sup> Mattana, “3D Audio Talks: Alvin Lucier”; Douglas Kahn, *Earth Sound Earth Signal: Energies and Earth Magnitude in the Arts* (Berkeley, CA: University of California Press, 2013), 106.

<sup>49</sup> Lucier and Simon, *Chambers*, 9.

<sup>50</sup> Lucier and Simon, *Chambers*, 35–36.

<sup>51</sup> Kahn, *Earth Sound Earth Signal*, 140.

<sup>52</sup> Maryanne Amacher, “Psychoacoustic Phenomena Musical Composition: Some Features of a ‘Perceptual Geography’,” in *Arcana III: Musicians on Music*, ed. John Zorn (New York, NY: Hips Road, 2008), 10. See also Allan Kozinn, “Maryanne Amacher, 71, Visceral Composer, Dies,” *New York Times*, October 28, 2009, Late Edition (East Coast), A30.

suggested that space was an integral component of experiencing music.<sup>53</sup> Making spaces accessible through transmission was central to her telematic *City-Links* project (1967–1981), which broadcasted live sounds from various urban locations to other areas. She remarked about this sonic telepresence, “‘I was particularly interested in the experience of ‘Synchronicity,’ hearing spaces distant from each other at the same time.’”<sup>54</sup>

Audiences of Amacher’s work describe how she would spend long periods of time on site preparing her sound installations and making minute adjustments to the sonic output to observe how sounds behave in space and how spaces impact them. For her series “Music for Sound Joined Rooms” (1980), she let sounds coming from loudspeakers travel through built structures like houses, permeating the air, floorboards, and walls. Amacher stated that she used “‘the architectural features of a building to create intensely dramatic sound experience ... a form of sound art that uses the architecture of rooms, specifically to magnify the expressive dimensions of the music.’”<sup>55</sup>

Listening to spaces was at the heart of both her compositional practice and the audience experience. She used sound as a material and tool to draw awareness to the space. Oliveros, who knew Amacher and her work well, appreciated that she “‘was experimenting in a way that was fascinating’.”<sup>56</sup> Oliveros shared with Amacher an

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<sup>53</sup> Paul Kaiser, “The Encircling Self: In Memory of Maryanne Amacher,” *PAJ* 36, no. 1 (January 2014): 12.

<sup>54</sup> Kozinn, “Maryanne Amacher, 71, Visceral Composer, Dies,” A30.

<sup>55</sup> Quote by Maryanne Amacher in Amy Cimini, “In Your Head: Notes on Maryanne Amacher’s Intelligent Life,” *The Opera Quarterly* 33, no. 3/4 (Summer/Autumn 2017): 276–277. Some phrases capitalized in original quotation.

<sup>56</sup> Lynn Woods, “The Amacher Archives,” *Kingston Times*, December 31, 2015, <https://www.tutorialdiversions.org/Documents/Woods-Amacher.pdf>.

interest in telepathic listening, although Oliveros applied it differently in improvisations via virtual video calls or simply through intentions for a group to listen across time and distance together at an agreed-upon time. As we shall see, Deep Listening artists have similarly linked awareness of sound and space. For example, Alarcón Díaz's exploration of telematics and telepresence is indebted to Amacher and Oliveros.

### Acousmatic Music

Like many other composers in the twentieth century, Oliveros embraced newly developed music technologies. The availability and use of microphones, magnetic tape recorders, tape processing, turntables, mixers, and loudspeakers after World War II led to a variety of new listening experiences, important to recognize for how they shaped Oliveros's work and the broader Deep Listening community. Within the historical contexts presented below, I highlight sound mediation, individuality in listening, and contributions by women, as these aspects are significant for the Deep Listening practice.

Electroacoustic music features electronically mediated and manipulated sound, shifting sonic attention away from traditionally notated scores and instead questioning the nature of sound, diffusion, and high-fidelity playback. During the recording process, soundwaves move through a space and activate the diaphragm of a microphone (in dynamic microphones), which vibrates a magnetic coil that converts the soundwaves to an electrical signal, whereupon they are recorded on a medium, like tape. These media and/or signals can then be edited and reconfigured to be processed through loudspeakers, which output soundwaves. Playback methods began as mono during the gramophone era but moved to two-channel stereo in the 1930s and 40s<sup>57</sup> and later to many more channels,

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<sup>57</sup> A patent for stereo was filed by engineer Alan Blumlein in 1931. Boren, "History of 3D Sound."

large speaker arrays, and spatialized speaker arrangements, which alter how recording playback sounds. Though the recorded and played sounds may seem to be the same in many cases, we cannot miss the “crucial point [that] recorded sound is mediated sound. And this mediation has led users to adapt their musical practices and habits in a variety of ways.”<sup>58</sup>

During the 1940s and 1950s, Pierre Schaeffer developed the term “musique concrète” to describe tape music created by working directly with sounds and their properties instead of depicting sounds, sources, and meanings through notation. By hiding the sound’s origin, musique concrète spurred a tradition of acousmatic music that reframed the listening experience for composers and audiences.<sup>59</sup> Significantly, this practice conceptualized and materialized sound as an object (“l’objet sonore”) and therefore as something that could be physically manipulated and changed. Simultaneously, it made recorded sound dependent on microphones, mixers, speakers, and the spaces they were placed, which involved fluctuations in quality and acoustic characteristics. All of this affected the listening experience.

Schaeffer and Pierre Henry’s collaboration on the multi-movement *Symphonie pour un homme seul* (*Symphony for One Man Alone*, 1950) exemplifies this. Gathering material from “the field of noises[,] ... concentrated on the organic and the living,”<sup>60</sup> Schaeffer and Henry “recorded sound by cutting directly into a disc with a lathe. Sounds

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<sup>58</sup> Mark Katz, *Capturing Sound: How Technology Has Changed Music*, 2nd ed. (Berkeley, CA: University of California Press, 2010), 2.

<sup>59</sup> Ruth Benschop, “Memory Machines or Musical Instruments? Soundscapes, Recording Technologies and Reference,” *International Journal of Cultural Studies* 10, no. 4 (2007): 488.

<sup>60</sup> Pierre Schaeffer, *In Search of a Concrete Music*, trans. Christine North and John Dack (Berkeley, CA: University of California Press, 2012), 47.

were edited by playing back several discs simultaneously and switching between them with a mixer.”<sup>61</sup> Schaeffer described the piece as: “The lone man had to find his symphony within himself, not by simply thinking up music in the abstract but by being his own instrument.”<sup>62</sup> The piece’s premiere replaced the orchestra on stage with turntables between two loudspeakers and Schaeffer at a mixer in the front row.<sup>63</sup> The piece features fragments of human voices, prepared piano, and metallic sounds. Schaeffer’s later techniques for tape editing and manipulation, including splicing, varying playback speed, and reversing playback, resulted in specialized machines like the phonogène and morphophone designed by Jacques Poullin in the 1950s. This set a precedent for later composers like Oliveros to push boundaries with playback technology, notable in her *Time Perspectives* (1961) and *I of IV* (1967).

Similarly, Daphne Oram, a British electronic composer and BBC music studio manager, imagined sounds

without the limitations of performance ... Rhythms become anything the composer can visualise without them having to be playable. Timbres have no registration and theoretically any sound, musical or otherwise, is within [the composer’s] grasp.<sup>64</sup>

She experimented with music recorded on tape, created her own personal Oramics Studios for Electronic Composition in 1958, and invented the system of Oramics by painting on 35mm film. Her Oramics Machine “used optical scanning technologies to

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<sup>61</sup> Joel Chadabe, *Electric Sound: The Past and Promise of Electronic Music* (Upper Saddle River, NJ: Prentice Hall, 1997), 28.

<sup>62</sup> Schaeffer, *In Search of a Concrete Music*, 47.

<sup>63</sup> Schaeffer, *In Search of a Concrete Music*, 61.

<sup>64</sup> “Daphne Oram – a brief biography,” Daphne Oram Trust, 2025, <https://www.daphneoram.org/aboutoram>.

read and interpret hand-drawn waveforms” for various parameters like pitch, dynamics, and vibrato.<sup>65</sup> This allowed visuals to be sonified and controlled for playback over loudspeakers, resulting in layered and often rhythmic electronic timbres. Oram encouraged listeners to “meet the music without any preconceived ideas,” yet also recognized the subjective individuality in listening, believing that the perceived sound signal “is as much *you* as it is the *music*.”<sup>66</sup> Her emphasis on individual perception established a basis for later listener-centered theories as by scholars Peter Szendy, Salomé Voegelin, and Nina Eidsheim.

Other composers pioneered elaborate loudspeaker setups for immersive listening experiences. Edgar Varèse’s three-channel spatial composition *Poème Electronique* used over 350 speakers specifically designed for the Philips Pavilion at the Brussels World’s Fair in 1958.<sup>67</sup> The sounds of sirens, grating noises, bell tones, chirps, percussive rhythms, and voices were used,<sup>68</sup> accompanied by images and light projected on the walls. Audiences moved through the stomach-shaped space as sounds swirled around them in an encompassing experience. Reactions varied from person to person, and one

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<sup>65</sup> “The Oramics Machine,” Daphne Oram Trust, July 13, 2020, <https://www.daphneoram.org/oramicsmachine/>. See also Tom Richards, “Oramics: Precedents, Technology and Influence” (PhD thesis, University of London, 2018), <https://doi.org/10.25602/GOLD.00026356>.

<sup>66</sup> Daphne Oram, *An Individual Note: Of Music, Sound and Electronics* (London, ENG: Galliard, 1972), 56.

<sup>67</sup> Vincenzo Lombardo, Andrea Valle, John Fitch, Kees Tazelaar, Stefan Weinzierl, and Wojciech Borczyk, “A Virtual-Reality Reconstruction of Poème Électronique Based on Philological Research,” *Computer Music Journal* 33, no. 2 (Summer 2009): 24–25.

<sup>68</sup> “Poeme Electronique,” Music 101, accessed May 16, 2023, <https://courses.lumenlearning.com/suny-musicapp-medieval-modern/chapter/poeme-electronique/>. For a recreation and interpretation, see Paul Oomen, “Poème Électronique (1958/2016),” Spatial Sound Institute, 2016, <https://spatialsoundinstitute.com/Poeme-Electronique-1958-2016>.

account recalls ““terror, anger, stunned awe, amusement, [and] wild enthusiasm.””<sup>69</sup>

These elaborate setups also integrated spatial awareness into the listening experience.

Channel-based audio remained widely used for diffusing sound.<sup>70</sup> Stereo sound is a type of channel-based audio whose playback facilitates sound moving from left to right; however, other formats are multi-directional. One approach is quadraphonic sound or positioning a speaker near each of the four corners of a room, which became standard practice in tape and electronic music studios in the 1960s.<sup>71</sup> Stockhausen’s *Kontakte* (1960) is quadraphonic with speakers placed left, right, front, and back of the space. Four stationary microphones record a spinning speaker, and the gestural sound is played through the four quadraphonic speakers to give listeners an immersive sense of rotating sound.<sup>72</sup>

Increasing the number of channels and speakers was another trend, as in Cage’s *Bird Cage* (1972), in which a solo performer distributes twelve tapes of varying lengths by four, six, or eight channels, creating a “space in which people are free to move and birds to fly.”<sup>73</sup> Surround-sound systems similarly strategically placed speakers in a space to create an enveloping listening experience and also allow for mobile listening for audience members. Beginning in the 1970s, the development of ambisonic recording

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<sup>69</sup> Ted Houghtaling, “Edgard Varèse - Poeme Electronique,” NYPR Archive Collections, November 22, 1957, <https://www.wnyc.org/story/edgard-varese-poeme-electronique/>.

<sup>70</sup> Jon Cohrs, Chris Wood, Julie Conquest, and Willa Köerner, “Key Concepts in Spatial Audio,” *New York Times* Research & Development, November 8, 2022, <https://rd.nytimes.com/projects/key-concepts-in-spatial-audio>.

<sup>71</sup> Zvonar, “A History of Spatial Music.” An early quad format was proposed by Peter Scheiber by 1968; see Boren, “History of 3D Sound.”

<sup>72</sup> Zvonar, “A History of Spatial Music.”

<sup>73</sup> John Cage Database of Works, “Bird Cage.”

technology allowed for 360-degree audio by recording in all directions, “which means the audio files can be used for a vast variety of configurations and formats.”<sup>74</sup> When rendered for multi-channel sound diffusion, ambisonics allow for fully immersive listening. Some pieces strive to create similar experiences without speaker systems, as we will see with Deep Listening works.

Alongside this interest in loudspeakers, some composers used contact microphones for amplification. These thin brass and piezoelectric discs can detect vibrations in an object; crystals in the piezo react to the mechanical strain of vibrations and produce voltage,<sup>75</sup> which can then be processed, amplified, and output through speakers. While “sound from a raw piezo element can be quite tinny and harsh,” covering the discs in electrical tape and/or a rubber coating like Plasti-Dip softens the harshness, reduces humming, and moderates high frequencies.<sup>76</sup> Initially used to amplify acoustic instruments, later “composers and musicians started to grasp the full potential of amplification as a creative tool” in unconventional ways.<sup>77</sup>

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<sup>74</sup> Cohrs et al., “Key Concepts in Spatial Audio”; Harley Brown, “A Visual History of Spatial Sound,” Red Bull Music Academy, September 19, 2018, <https://daily.redbullmusicacademy.com/2018/09/a-visual-history-of-spatial-sound>.

<sup>75</sup> Jesse Seay, “The Electronics of Microphones and Loudspeakers,” in *Foundations in Sound Design for Embedded Media: A Multidisciplinary Approach*, ed. Michael Filimowicz (New York, NY: Routledge, 2020), 35–36. See also *Grove Music Online*, “electronic instruments,” by Hugh Davies, 2001, <https://doi-org.ezproxy1.lib.asu.edu/10.1093/gmo/9781561592630.article.08694>.

<sup>76</sup> Kevin Robinson, *Practical Audio Electronics* (London: Focal Press, 2020); Nicolas Collins, *Handmade Electronic Music: The Art of Hardware Hacking* (New York, NY: Routledge, 2006), 31.

<sup>77</sup> Daniela Fantechi, “The Contact Microphone: A Cultural Object,” *Handmade Electronic Music*, 2024, [https://routledgetextbooks.com/textbooks/9780367210106/culture\\_history.php](https://routledgetextbooks.com/textbooks/9780367210106/culture_history.php).

For example, performers of Cage's *Cartridge Music* (1960) amplify "small sounds" by inserting objects into the phonograph cartridge of a turntable.<sup>78</sup> Stockhausen, who attended the *Cartridge Music* premiere,<sup>79</sup> soon amplified acoustic instruments with contact mics in his works *Mixtur* (1964), *Mikrophonie I* (1964), *Prozession* (1967), and *Kurzwellen* (1968). Hugh Davies, assistant to Stockhausen in the 1960s, developed instruments with various contact mics, like the Shozyg made with blades, springs, and a ball-bearing inside a hollow encyclopedia.<sup>80</sup> Richard Lerman also employed contact mics around this time to "record sounds and vibrations in bicycles[,] ... wind harps, plants, boat anchor ropes, rocks, cactus thorns, heat expansion in metal, [and] spider webs (with limited success)."<sup>81</sup> Other notable artists who worked with contact mics include Johannes Bergmark, Mario Bertoncini, Leif Brush, Max Neuhaus, and Tom Nunn, and Deep Listening artist Madsen continues this practice in *The Voices of Stones*, discussed in Chapter 5.<sup>82</sup>

In the 1970s, Luc Ferrari, a colleague of Schaeffer's in the Groupe de Recherches Musicales (GRM), made a name for himself when he reframed everyday environmental sounds in his acousmatic compositions. Unlike Schaeffer, who often hid the source of

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<sup>78</sup> "Cartridge Music," John Cage, 2024, accessed December 9, 2024, [https://www.johncage.org/pp/John-Cage-Work-Detail.cfm?work\\_ID=36](https://www.johncage.org/pp/John-Cage-Work-Detail.cfm?work_ID=36).

<sup>79</sup> Fantechi, "The Contact Microphone: A Cultural Object."

<sup>80</sup> "About Shozyg," Goldsmiths, University of London, 2012, <http://sho-zyg.com/shozyg.html>.

<sup>81</sup> Richard Lerman, "A Guide for Working with Piezo Electric Disks to Introduce Children to Issues of Acoustic Ecology and Sonic Creativity," paper presented at the Conference of the World Forum for Acoustic Ecology, Stockholm, Sweden, June 1998, <https://www.public.asu.edu/~rlerman/PDF%20Files/Children%20&%20Piezo%20disks.pdf>.

<sup>82</sup> *Grove Music Online*, "electronic instruments," by Hugh Davies, 2001, <https://doi-org.ezproxy1.lib.asu.edu/10.1093/gmo/9781561592630.article.08694>; Thom Holmes, *Sound Art: Concepts and Practices* (New York, NY: Routledge, 2022), 87–88. See also Collins, *Handmade Electronic Music*.

recorded sounds, Ferrari minimally edited his field recordings, therefore allowing listeners to identify the sounds' origins more easily.<sup>83</sup> Ferrari's *Presque rien No. 1, le lever du jour au bord de la mer* (*Almost nothing No. 1, sunrise by the sea*, 1970) presents daily sounds and rhythms in the Croatian village of Vela Luka without heavy processing. This piece, along with Else Marie Pade's earlier *Symphonie Magnétophonique* (*Symphony For Tape*, 1958), which portrayed daily sounds of Copenhagen, are early examples of soundscape compositions, tying acousmatic music to the field of acoustic ecology.<sup>84</sup>

In *Presque rien No. 1*, Ferrari wove sounds into a social narrative,<sup>85</sup> and thus he intended subjective human memory and perception to contribute to the listening process. Through the concept of "electroacoustic nature photography" or "sound photography," Ferrari sought "to render audible ... the city or the country with the tractors, the traffic, the background noise of phone lines, the people on the sidewalk, the music coming out of the open doors of shops - everything that makes up our urban or rural environment."<sup>86</sup> However, he also used the sounds as if "painting, distancing ... from reality."<sup>87</sup> His music

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<sup>83</sup> Ferrari also acknowledged the influence of Varèse's "use of sound as a thing in and of itself" and of Cage's philosophy. Brigitte Robindoré and Luc Ferrari, "Luc Ferrari: Interview with an Intimate Iconoclast," *Computer Music Journal* 22, no. 3 (Autumn 1998): 10–13.

<sup>84</sup> See Else Marie Pade, "The Compositional Possibilities Are Endless," *Wire*, June 2017, <https://www.thewire.co.uk/in-writing/essays/the-compositional-possibilities-are-endless-by-else-marie-pade>. Originally published in the Danish edition of *Lettre Internationale*, no. 4 (June 2004).

<sup>85</sup> Jacqueline Caux and Luc Ferrari, *Almost Nothing with Luc Ferrari: Interviews* (Los Angeles, CA: Errant Bodies Press, 2012), 129, 149.

<sup>86</sup> Caux and Ferrari, *Almost Nothing with Luc Ferrari*, 109.

<sup>87</sup> Caux and Ferrari, *Almost Nothing with Luc Ferrari*, 108.

shows manifold approaches to and applications of listening to the outside environment, which Oliveros expanded on in her works and Deep Listening practice.

While the history of acousmatic and electronic music is typically associated with white men in privileged positions, many women made important contributions despite limited access to equipment and public presence. Amacher, Oram, Pade, and Éliane Radigue still forged ways to create noteworthy electroacoustic work, often through their connections with other composers. French composer Radigue, for instance, did not have consistent access to music studios, but she produced music based on microscopic listening when possible. She explored relationships between microphones and loudspeakers by recording feedback onto tape and then slowing the sounds down to focus on slight and intricate timbral changes, as in *Vice-Versa* (1970), which featured four tracks of tape feedback played at different speeds that listeners controlled. Hearing Schaeffer's music and working as Henry's assistant inspired Radigue's approach to "achieve a sound without directionality, a sound that permeated the space without even the suggestion of a performer."<sup>88</sup>

Despite Schaeffer and Henry's rejection of Radigue's feedback music, she continued work in her home studio and later in a studio space at the New York University School of Arts while in residency, experimenting with synthesizers. Repeated listening in various ways, such as "distracted listening ... that waits for sounds to call out" was integral to Radigue's compositional process.<sup>89</sup> She stated, "Everything can become

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<sup>88</sup> Chadabe, *Electric Sound*, 76–77.

<sup>89</sup> William Dougherty, "Imagining Together: Éliane Radigue's Collaborative Creative Process" (DMA diss., Columbia University, 2021), 15, ProQuest (28497766).

music. It depends on the way we listen to it, and what we do with it also.”<sup>90</sup> She and Oliveros knew each other, and Radigue’s combination of “musical work and motherhood” in the domestic space of her home studio has also been compared to Oliveros’s tape music using “bathrooms and domestic interiors as both recording chambers and sound sources” as examples of female creativity outside formal studios.<sup>91</sup>

Oliveros herself enriched the acousmatic music repertoire with several works for tape and electronics, such as *Time Perspectives* (1961), *Bye Bye Butterfly* (1965), *Mnemonics* (1965), *Big Mother is Watching You* (1966), *I of IV* (1967), *Tara’s Room* (1988), and *Ear Piece* (1998). Various listening practices are “shaped by technologies and their interfaces and affordances, which have extended the reach of listening and multiplied its possibilities,”<sup>92</sup> and Oliveros’s listening techniques and development of Deep Listening approaches, molded by tapes, oscillators, recordings, and playback technologies, are no exception.

### Soundscape Composition and Acoustic Ecology

Recording and playback technologies enabled composers to experience, understand, and interact with sound in novel ways. Such careful listening is also essential for acoustic ecology, a field concerned with the roles of sound in ecosystems. Through listening and recording the land, composers create acousmatic works, often called

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<sup>90</sup> Jonathan Hepfer, “An Interview with Éliane Radigue,” *Purple Magazine* 32 (2019), <https://purple.fr/magazine/the-cosmosissue-32/an-interview-with-eliane-radigue/>. Radigue expressed this same idea in an interview with Louise Marshall: “And so everything can become music depending on the way you listen to it.” Louise Marshall, “Deep Listening: The Strategic Practice of Female Experimental Composers Post 1945” (PhD diss., University of the Arts London, 2018), 169, ProQuest (13873773).

<sup>91</sup> Marshall, “Deep Listening,” 19.

<sup>92</sup> Rice, “Listening,” 102.

soundscape compositions, that draw attention to particular sound environments through creative use of field recording. Understanding this history and role of recording technologies is key for contextualizing the varied listening practices in subsequent chapters.

Although not the first to explore soundscape compositions, members of the Canadian World Soundscape Project and Sonic Research Studio at Simon Fraser University in the late 1960s promoted creative work rooted in acoustic ecology research. R. Murray Schafer, a highly influential advocate for environmental listening, established key terms such as hi-fi and lo-fi sonic environments, keynote sound, and schizophonia to foster critical environmental listening.<sup>93</sup> These terms were adopted outside acoustic ecology; for example, Oliveros frequently references soundscapes in her book *Deep Listening: A Composer's Sound Practice*. Deep Listening teacher Björn Eriksson recalls that his internet searches in the late 1990s for sound and listening started to show both soundscape studies and Deep Listening as results.<sup>94</sup>

Building on Cage, Schafer wanted to “treat the world as a macrocosmic musical composition” so musicians could orchestrate better acoustic balance.<sup>95</sup> He thought that certain areas were plagued by noise pollution or too much subjectively unwanted sound. His methods, like “ear cleaning” exercises for children, aimed to increase sonic

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<sup>93</sup> A glossary of soundscape terms can be found in R. Murray Schafer, *The Soundscape* (Rochester, VT: Destiny Books, 1977). See also Barry Truax, ed., *Handbook for Acoustic Ecology* (Vancouver, CAN: ARC Publications, 1978).

<sup>94</sup> Björn Eriksson, e-mail message to author, May 19, 2025.

<sup>95</sup> Schafer, *The Soundscape*, 5. See also R. Murray Schafer, *The New Soundscape: A Handbook for the Modern Music Teacher* (Scarborough, CAN: Berandol Music Limited, 1969), 1–2.

awareness and therefore encourage the public to adjust their sonic footprint.<sup>96</sup> In contrast, Deep Listening does not expect “improvement” to soundscapes but rather promotes heightened sonic awareness of inner and outer environments. Oliveros’s concept of the sonosphere, though similar to Schafer’s soundscape in that both are holistic views of sonic awareness, embraces not only acoustic but also magnetic and electrical energies for listening across multiple scales (personal, interpersonal, planetary, etc.).<sup>97</sup>

Schafer’s music and ideas, however, reveal contradictions and show problematic assumptions about environments.<sup>98</sup> For example, his large-scale, site-specific music theater cycle *Patria* (initiated in 1966) sought to advance awareness of sonic environments through an immersive experience for performers and audiences in the Canadian wilderness. Yet staging performances in remote areas involves habitat degradation due to the carbon and sonic footprints incurred through human presence and activities like travel, even when approached sustainably. Schafer also deemed wilderness spaces sonically superior to urban environments<sup>99</sup> and pitted “natural” sounds against human-generated ones, which opposes ecological thinking.<sup>100</sup> Further, the concept of

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<sup>96</sup> R. Murray Schafer, *Ear Cleaning: Notes for an Experimental Music Course* (Toronto, CAN: Clark and Cruickshank, 1967); R. Murray Schafer, “The Music of the Environment,” in *Audio Culture: Readings in Modern Music*, ed. Christoph Cox and Daniel Warner (New York, NY: Continuum, 2004), 36–38.

<sup>97</sup> Kahn, *Earth Sound Earth Signal*, 206. See also Pauline Oliveros, “Auralizing in the Sonosphere: A Vocabulary for Inner Sound and Sounding,” *Journal of Visual Culture* 10, no. 2 (2011): 163.

<sup>98</sup> Robin Parmar, “Sounding the Anthropocene: Rethinking Soundscapes and Nature,” augmented version of a talk presented at HearSay in Kilfinane, County Limerick, Ireland, April 4-7, 2019, [https://www.academia.edu/38751566/Sounding\\_the\\_Anthropocene\\_Rethinking\\_soundscapes\\_and\\_nature](https://www.academia.edu/38751566/Sounding_the_Anthropocene_Rethinking_soundscapes_and_nature).

<sup>99</sup> Kate Galloway, “Pathways and Pilgrimages: The In-Between Spaces in the *Patria* Cycle,” *Intersections* 28, no. 1 (2007): 140–141.

<sup>100</sup> Parmar, “Sounding the Anthropocene.”

environmental “tuning,” as in his 1977 book titled *The Tuning of the World*, suggests anthropocentricity and the silencing of select sounds.<sup>101</sup> Schafer’s yearning for nonexistent “untouched” sonic wilderness environments ignored the existence and wisdom of Indigenous communities in these regions, thereby reflecting a colonialist attitude.<sup>102</sup>

For instance, in *Soundscapes of Canada* (1974), the radio program Schafer directed and hosted, the sounds of church bells were presented positively, failing to recognize that Indigenous listeners may hear them as a painful memory of residential schools.<sup>103</sup> Markedly, such assumptions contribute to the marginalization of Indigenous groups and ignore their ways of knowing, which Indigenous artists, curators, and writers like Miriam-Rose Ungunmerr-Baumann, Dylan Robinson, and Kite have challenged. Schafer later “explicitly call[ed] for the inclusion of First Nations communities and Indigenous perspectives” in Canadian music, though his description of “idealized Canada” as “a rugged northern land, sparsely populated by a tough northern people ... Shaped by their harsh, beautiful, lonely environment” perpetuated colonial constructs.<sup>104</sup>

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<sup>101</sup> Francisco López, “Schizophonia vs. L’objet Sonore: Soundscapes and Artistic Freedom,” The Acoustic Ecology Institute, 2001, <https://aeinews.org/aeiarchive/writings/schizo.html>.

<sup>102</sup> For more on the related topic of racial anxieties in early conservation efforts, see Miles A. Powell, *Vanishing America: Species Extinction, Racial Peril, and the Origins of Conservation* (Cambridge, MA: Harvard University Press, 2016).

<sup>103</sup> Mitchell Akiyama, “Unsettling the World Soundscape Project: Soundscapes of Canada and the Politics of Self-Recognition,” *Sounding Out!* August 20, 2015, <https://soundstudiesblog.com/2015/08/20/unsettling-the-world-soundscape-project-soundscapes-of-canada-and-the-politics-of-self-recognition/>.

<sup>104</sup> Lauren Rosati, “‘Civilizing’ Noise: An Introduction to the Special Issue on Sound, Colonialism, and Power,” *The Journal of Media Art Study and Theory* 2, no. 2 (November 2021): 3–14. Colin Eatock, “R. Murray Schafer at 75: An Appreciation,” Dr. Colin Eatock, 2009, <https://www.colineatock.com/schafer-at-75.html>.

Schafer's concept of soundscape has been critiqued for objectifying sound rather than treating it as experiential,<sup>105</sup> a notion in tension with Deep Listening's nonjudgmental, inclusive, and embodied listening practices.

In comparison, Schafer's protégé, composer Barry Truax, has created compelling acousmatic soundscape compositions emphasizing relational listening. He also compiled important vocabulary to describe sounds in an ecosystem and articulated a theory of acoustic communication in his *Handbook for Acoustic Ecology* (1978).<sup>106</sup> His piece *Pacific Fanfare* (1996) traces changes in Vancouver soundscapes by featuring ten of its soundmarks, landmark-like sounds unique and iconic to specific communities. In the piece, Truax evokes sonic memories and invites listening across time and place by combining slightly edited field recordings of bells, honks, and ship horns with time-stretched effects. Differentiating between musique concrète/acousmatic music and soundscape composition, he argues that "the original sounds must stay recognizable and the listener's contextual and symbolic associations should be invoked for a piece to be a soundscape composition."<sup>107</sup> This approach with recalling memories, imaginary listening, and fusion of timelines resonates with the Deep Listening's dream modality.

Another significant sound ecologist, Hildegard Westerkamp, has also rooted her music in environmental listening. By pairing field recordings with narration, she guides

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<sup>105</sup> Tim Ingold, "Against Soundscape," in *Autumn Leaves: Sound and the Environment in Artistic Practice*, ed. Angus Carlyle (Paris, FRA: Double Entendre, 2007), 10–13.

<sup>106</sup> Truax, *Handbook for Acoustic Ecology*. See also Barry Truax, *Acoustic Communication*, 2nd ed. (Westport, CT: Albex, 2001).

<sup>107</sup> Barry Truax, "Soundscape Composition as Global Music," paper presented at the Sound Escape Conference, Trent University, Peterborough, Ontario, July 1, 2000, <http://www.sfu.ca/~truax/soundscape.html>.

listeners to deeper engagement with sonic environments. Growing from her radio program *Soundwalking* – a term for silent walks focused on listening to explore places sonically – her soundscape composition *Kits Beach Soundwalk* (1989) for voice and two-channel audio contrasts the sounds of sunbathers and loud music in Kitsilano Beach in Vancouver against “tiny” sounds of “barnacles, the world of high frequencies, inner space and dreams.”<sup>108</sup> Through careful listening as practiced with the World Soundscape Project, she “discovered that environmental sounds were the perfect compositional ‘language’.”<sup>109</sup> Similar to Ferrari and Truax, she preserves the contexts of environmental recordings “in an exploration of the sounds and their personal, social, and/or environmental significance.”<sup>110</sup> She credits Oliveros, whom she met, for inspiring her to delve more into the meditative aspect of listening and has called Oliveros the mother of environmental listening.<sup>111</sup> Westerkamp’s soundwalks, with prompts to “imagine” or recollect dreams, move listeners between real, remembered, dream, and imagined spaces,<sup>112</sup> which aligns with Deep Listening’s dream modality.

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<sup>108</sup> “Kits Beach Soundwalk (1989),” Hildegard Westerkamp *Inside the Soundscape*, 2023, <https://www.hildegardwesterkamp.ca/sound/comp/3/kitsbeach/>.

<sup>109</sup> Hildegard Westerkamp, “Linking Soundscape Composition and Acoustic Ecology,” *Organized Sound* 7, no. 1 (2002): 51.

<sup>110</sup> Richard Oddie, “Other Voices: Acoustic Ecology and Urban Soundscapes,” in *The Natural City: Re-Envisioning the Built Environment*, ed. Ingrid Leman Stefanovic and Stephen Bede Scharper (Toronto, CAN: University of Toronto Press, 2012), 167.

<sup>111</sup> “Writer of Sound: Hildegard Westerkamp (composer, radio artist, sound ecologist) in conversation with Riccardo Giacconi,” Riccardo Giacconi, November 2017, <https://riccardogiacconi.com/conversations/-hildegard-westerkamp/>; Stephan Moore, “Three Recent Moments with Pauline Oliveros,” *Soundscape* 16 (2017): 17. She said Schafer was like the father.

<sup>112</sup> For example, see the first soundwalk exercise and “A Soundwalk in Queen Elizabeth Park in Vancouver” in Hildegard Westerkamp, “Soundwalking,” Hildegard Westerkamp *Inside the Soundscape*, January 1, 2001 (originally published 1974), [https://www.hildegardwesterkamp.ca/writings/writingsby/?post\\_id=13&title=soundwalking](https://www.hildegardwesterkamp.ca/writings/writingsby/?post_id=13&title=soundwalking). Other examples with remembered or dream spaces include “One Visitor’s Portrait of Banff” (1992), “Once Upon

Soundwalking presents a form of environmental engagement through listening. While closely associated with Schafer's circle, earlier and parallel examples of mobile listening exist.<sup>113</sup> Composer-performer Max Neuhaus, in his 1966 *Listen* series, conducted listening walks, the first of which guided participants through his New York City neighborhood "to listen to their surrounding environment, hearing sounds from a rumbling power plant, highways, river, people in the streets, and so on" without judgement before concluding in a performance at his apartment.<sup>114</sup> He believed humans' listening relied on cultural conditioning, and he "challenges the listener to forget about the constrictions of what music or sound/noise had been before, regardless of the notions of what's 'aesthetically bad,' and to try to hear something new,"<sup>115</sup> similar to Deep Listening's efforts.

Composer and scholar Andra McCartney also approached soundwalks as a means to experience and research soundscapes. She argued that they "provide a way for people to think through the cultural, political, sonic and social meanings of everyday sounds."<sup>116</sup>

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a Time" (2012), "Beads of Time Sounding" (2016), and "The Soundscape Speaks - Soundwalking Revisited" (2021), among others.

<sup>113</sup> Cage also initiated a silent walk that could be interpreted as a soundwalk with *Demonstration of the Sounds of the Environment* (1971), which occurred at the University of Wisconsin Milwaukee to protest police brutality. See Feisst and Paine, "Teaching Acoustic Ecology through John Cage's *49 Waltzes for the Five Boroughs*," 77.

<sup>114</sup> Megan Murph, "Max Neuhaus's Sound Works and the Politics of Noise," *Ecomusicology Review* 5 (2017), <https://ecomusicology.info/max-neuhauss-sound-works-and-the-politics-of-noise/>. Schafer differentiated between soundwalks and listening walks; see Megan Elizabeth Murph, "Max Neuhaus, R. Murray Schafer, and the Challenges of Noise" (PhD diss., University of Kentucky, 2018), 63–70, ProQuest (10954432).

<sup>115</sup> Murph, "Max Neuhaus, R. Murray Schafer, and the Challenges of Noise," 62–63.

<sup>116</sup> Andra McCartney, "Meaningful Listening through Soundwalks," talk at Electroacoustic Music Studies Network Conference, Stockholm, June 2012, [http://www.ems-network.org/IMG/pdf\\_EMS12\\_mccartney.pdf](http://www.ems-network.org/IMG/pdf_EMS12_mccartney.pdf). See also Andra McCartney, "Soundwalking: Creating

The popularity of personal devices like the Walkman and iPod further allowed mediated mobile listening with “aural walks.”<sup>117</sup> Though most soundwalks are not designed for vision- and mobility-impaired listeners, they still provide a multi-sensory experience of spaces.

Several Deep Listening scores incorporate the movement modality for listening. Stephanie Loveless’s “Do-It-Yourself Soundwalk Instructions” from the *Deep Listening Anthology* (2009), for example, connects walking and sonic perception.<sup>118</sup> Though walking while listening may shift or reduce attention,<sup>119</sup> it also “brings together movement, thought, and consciousness” and may spark interactions with environments.<sup>120</sup> Together, mobile and stationary listening can expand sonic attention,<sup>121</sup> and both are valued in acoustic ecology and the Deep Listening practice. However, Deep Listening intentionally emphasizes embodiment, using the movement modality to listen to spaces and places, an idea considered further in Chapter 5 with Alarcón Díaz’s INTIMAL project and Madsen’s interactions with geological formations.

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Moving Environmental Sound Narratives,” in *The Oxford Handbook of Mobile Music Studies*, ed. Sumanth S. Gopinath and Jason Stanyek (New York, NY: Oxford University Press, 2014), 2:212–237.

<sup>117</sup> Iain Chambers, “The Aural Walk,” in *Audio Culture: Readings in Modern Music*, ed. Christoph Cox and Daniel Warner (New York, NY: Continuum, 2004), 99–100.

<sup>118</sup> Stephanie Loveless, “Do-It-Yourself Soundwalk Instructions,” in *Deep Listening Anthology: Scores from the Community of Deep Listeners*, ed. Marc Jensen (Kingston, NY: Deep Listening Publications, 2009).

<sup>119</sup> Garth Paine and Celia Yang, *The Environmental Listening Field Guide* (Tempe, AZ: Arizona State University, Tempe, 2024), 24; María T. Soto-Sanfiel, “Engagement and Mobile Listening,” *International Journal of Mobile Communication* 13, no. 1 (2015): 29–50.

<sup>120</sup> Matthew Gandy, “Attentive Observation: Walking, Listening, Staying Put,” *Annals of the American Association of Geographers* 114, no. 7 (2024): 1390.

<sup>121</sup> Maša Radi Buh, “Geolocational Soundwalk as Ecological Choreography: Walking and Listening towards Ecological Awareness,” *Maska* 37, no. 3 (2022): 44; Paine and Yang, *The Environmental Listening Field Guide*, 24.

Today, acoustic ecology efforts extend worldwide, as shown by official affiliates of The World Forum for Acoustic Ecology (WFAE) located in Australia, Canada, the U.S., Mexico, the U.K. and Ireland, Finland, Japan, and Greece, and the Forum Klanglandschaft in Italy and Germany. Other significant listeners and contributors to acoustic ecology include composers David Dunn, Gordon Hempton, David Monacchi, and Douglas Quin. Soundscape ecologist and field recordist Bernie Krause, founder of the Wild Sanctuary, committed to documenting and archiving soundscapes and introduced the important terms of biophony, geophony, and anthrophony to describe sound sources when listening to environments.<sup>122</sup> Sabine Feisst points to acoustic ecology for “a deep understanding of sound patterns [and rhythms] of the land”<sup>123</sup> and Garth Paine’s model for “Acoustic Ecology 2.0” advances community-based listening for stewardship efforts.<sup>124</sup> The Acoustic Ecology Lab at Arizona State University, co-directed by Feisst and Paine, showcases this interdisciplinary effort.<sup>125</sup> Notable are their Community Environmental Listening project supporting collective action for listening through workshops and field guide,<sup>126</sup> and the Listen<sup>n</sup> Project in which local communities of citizen scientists make regular ambisonic and stereo sound recordings in national parks in the American Southwest, Mexico, Chile, and Germany to develop an extensive and

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<sup>122</sup> See Wild Sanctuary, 2025, <https://www.wildsanctuary.com>; Bernie Krause, *The Great Animal Orchestra: Finding the Origins of Music in the World’s Wild Places* (New York, NY: Little, Brown & Company, 2012). See also Bryan Pijanowski, *Principles of Soundscape Ecology: Discovering Our Sonic World* (Chicago, IL: University of Chicago Press, 2024).

<sup>123</sup> Sabine Feisst, “Hearing Borderland Temporalities: Sound Patterns of U.S.-Mexico Border Fortification,” in *Different Rhythms*, ed. Francesco Michi and Stefano Zorzanello (Giulianova, ITA: Galaad Edizioni, 2019), 41. Thank you to Dr. Feisst for sharing this chapter with me.

<sup>124</sup> Garth Paine, “Acoustic Ecology 2.0,” *Contemporary Music Review* 36, no. 3 (2017): 171–181.

<sup>125</sup> Acoustic Ecology Lab at ASU, 2021, <https://acousticecologylab.org/>.

<sup>126</sup> Community Environmental Listening, 2025, <https://www.environmental-listening.org/>.

freely accessible digital database of field recordings that can then be used in research and artistic endeavors.<sup>127</sup>

Efforts to automate soundscape analysis through machine learning and AI programs provide new ways to listen to and interpret sounds in a space.<sup>128</sup> Integrating such technologies allows field recordists to identify and study chosen sonic properties but may also raise ethical concerns about how recordings are collected and shared. Listening, including through field recording (whether by memory, transcription, audio recording, or other means), can be extractive or treat sonic environments as an “infinitely plentiful creative resource” to be mined.<sup>129</sup> Thus, listeners should consider aspects like a field recordist’s position, purpose, consent, ownership, affect, and consequence of recorded sounds.<sup>130</sup> This is also applicable for Deep Listening participants since, as Robinson

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<sup>127</sup> The Listen(n) Project, accessed 2025, <https://www.ecolisten.org/blog/>; Sabine Feisst, Leah Barclay, Garth Paine, and Daniel Gilfillan, “The Listen(n) Project: Acoustic Ecologies of the American Southwest Desert(s) and Transmedia Dissemination,” in *Invisible Places – Sounding Cities: Sound Urbanism and Sense of Place*, ed. Raquel Castro and Miguel Carvalhais (Viseu, PRT: World Forum for Acoustic Ecology, 2014), 298–310; Sabine Feisst, Leah Barclay, Garth Paine, and Daniel Gilfillan, “The Listen(n) Project: Acoustic Ecology as a Tool for Remediating Environmental Awareness,” in *International Symposium on Electronic Art 2015: Disruption Proceedings*, ed. Phillipe Pasquier and Thecla Schiphorst (Vancouver, CAN: Simon Fraser University, 2015); Sabine Feisst, “Sonic Placemaking in the American Southwest: The Listen(n) Project,” in *Music and Landscape / Soundscape and Sound Art*, ed. Christa Brüstle and Andreas Dorschel (Vienna, AUT: Universal Edition, 2019).

<sup>128</sup> See Jingyi Wang, Chunming Li, Yinglun Lin, Chen Weng, and Yaran Jiao, “Smart Soundscape Sensing: A Low-cost and Integrated Sensing System for Urban Soundscape Ecology Research,” *Environmental Technology & Innovation* 29 (2023): 102965; Aura Kaarivuo, Jonas Oppenlander, Tommi Kärkkäinen, and Tommi Mikkonen, “Exploring Emergent Soundscape Profiles from Crowdsourced Audio Data,” *Computers, Environment and Urban Systems* 110 (2024): 102112; Juan Sebastián Ulloa, Sylvain Hupert, Juan Felipe Latorre, Thierry Aubin, Jérôme Sueur, “scikit-maad: An Open-source and Modular Toolbox for Quantitative Soundscape Analysis in Python,” *Methods in Ecology and Evolution* 12, no. 12 (2021): 2334–2340; Yuanbo Hou, Qiaoqiao Ren, Huizhong Zhang, Andrew Mitchell, Francesco Aletta, Jian Kang, and Dick Botteldooren, “AI-Based Soundscape Analysis: Jointly Identifying Sound Sources and Predicting Annoyance,” *The Journal of the Acoustical Society of America* 154, no. 5 (2023): 3145–3157.

<sup>129</sup> Kate Galloway, “On the Ethics of Extraction in Environmental Sound Art,” *Musicultures* 49 (2022): 116–117.

<sup>130</sup> Tullis Rennie, “Recording, Representation & Responsibility: Questions of Authorship and Agency when Field Recording for Electroacoustic Composition,” *Electroacoustic Music Studies Network*

notes, they may overlook their own positionality and relationship with a place, and therefore risk extractive listening.<sup>131</sup> This critique will be further explored in Chapter 5.

## Listening to Bodies and Entities

### Human Bodies

Since the 1950s, many experimental composers, including Oliveros, have turned their attention inward to increase awareness of their own bodies and their sounds beyond vocal production. They have therefore recognized the human body as an environment and source of sound and listening. Amacher, for example, explored eartones, additional tones, and response tones (sounds or beats artificially produced in the ear as a reaction to the combination of sounded pure tones).<sup>132</sup> Similarly, she played with otoacoustic emissions, a phenomenon in which the inner ear itself emits tones. By drawing on these internal auditory processes, Amacher emphasized sounding and listening within the human listener's head. Music researcher Gascia Ouzounian notes about such an embodied experience,

Hearing my own head as a finite domain, a mappable space where sounds can exist and disappear, made me face the possibility that my body may, in actuality, really be finite; limited; a space like other spaces, with things moving in and out

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*Conference 2015: The Art of Electroacoustic Music Proceedings*, 3, [http://www.ems-network.org/IMG/pdf\\_EMS15\\_Rennie.pdf](http://www.ems-network.org/IMG/pdf_EMS15_Rennie.pdf); Kati Fargo Ahern, "Recording Nonverbal Sounds: Cultivating Rhetorical Ambivalence in Digital Methods," in *Methods and Methodologies for Research in Digital Writing and Rhetoric: Centering Positionality in Computers and Writing Scholarship*, ed. Crystal VanKooten and Victor Del Hierro (Fort Collins, CO: The WAC Clearinghouse, 2022), 1:176.

<sup>131</sup> Dylan Robinson, *Hungry Listening: Resonant Theory for Indigenous Sound Studies* (Minneapolis, MN: University of Minnesota Press, 2020), 247.

<sup>132</sup> Cimini, "In Your Head," 273.

of it, living and dying in it, with or without my permission, extending, or limiting its lifespan.<sup>133</sup>

Amacher's work thus foregrounds inner environments of human bodies for listeners.

Lucier was interested in the mind as a space as well. His landmark *Music for Solo Performer* (1965), which used alpha brain waves to create the piece's sounds through vibrations, brought awareness to inner environments. He understood this piece as going "directly from the brain to the instruments, bypassing the body entirely."<sup>134</sup> However, by making the inaudible brain waves heard, he invites audiences to reflect on their own bodily processes and experience the sound of vibrations in the brain, an act that "unloosen[s] thereby the knotted dualisms of nature/culture, human/nonhuman, body/mind."<sup>135</sup>

Lucier was also struck by the idea that instrumental performers "might stop playing, too, and imagine the music going on. What a beautiful idea! The actual sounds exist in your mind."<sup>136</sup> Continuing with this concept of inner listening, he experimented with neurophones to send music directly to audience bodies without sound moving through the air.<sup>137</sup> While he did not ultimately realize this idea, musician Laurie Anderson expanded on it with her installation of the *Handphone Table* (1978), designed

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<sup>133</sup> Gascia Ouzounian, "Embodied Sound: Aural Architectures and the Body," *Contemporary Music Review* 25, no. 1–2 (2006): 77.

<sup>134</sup> Lucier and Simon, *Chambers*, 73.

<sup>135</sup> Deborah Kapchan, "Body," in *Keywords in Sound*, ed. David Novak and Matt Sakakeeny (Durham, NC: Duke University Press, 2015), 42.

<sup>136</sup> Alvin Lucier, *Music 109: Notes on Experimental Music* (Middletown, CT: Wesleyan University Press, 2012), 24. He is specifically referring to the qin, which he spells "ch'in."

<sup>137</sup> Lucier and Simon, *Chambers*, 124–125.

by Bob Bielecki, which allows sounds to be listened to internally through bone conduction.

This focus on listening to the mind was further explored by experimental composer Richard Teitelbaum who created biofeedback music mediating the brain's alpha waves through EEG electrodes and a Moog synthesizer. His piece *Organ Music* (1968) made brainwaves and heartbeats audible as electronic signals to give audiences the notion “of being inside a living heart and brain.”<sup>138</sup> Through this mapping of inner processes and body functions as audible presence in the space, Teitelbaum encouraged performers and audiences to listen and reconsider their relationships to their bodies, sounds, and others. Reevaluation of positionality is central to the Deep Listening practice as well, further discussed in Chapter 5. Oliveros and Teitelbaum, who knew each other, both also explored collective improvisation.<sup>139</sup> Composer David Rosenboom also used EEG sensors, as in *On Being Invisible* (1977–2000) for soloist, brainwaves, and a computer-assisted electronic music system. By intertwining the soloist's improvisation with their brainwave data, Rosenboom highlighted the role of an individual listening attentively, invited making decisions about engagement and inactivity in a dynamic environment,<sup>140</sup> and explored various relationships between sounds produced by the human body. In a 1978 interview, Oliveros exchanged ideas about biofeedback training

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<sup>138</sup> David Rosenboom, *Biofeedback and the Arts: Results of Early Experiments* (Vancouver, CAN: Aesthetic Research Centre of Canada, 1974), 39.

<sup>139</sup> For example, see their talks from “Other Minds Festival Djerassi Resident Artists Program Panel Discussions,” Other Minds, March 3–5, 2002, <https://californiarevealed.org/do/05b221ab-ca4b-4e47-977b-06b3e52eb9fe>.

<sup>140</sup> Alberto Novello, “From Invisible to Visible: The EEG as a Tool for Music Creation and Control” (master's thesis, Institute of Sonology, Royal Conservatoire in The Hague, 2012), 21.

with Rosenboom, and biofeedback's influence on the Deep Listening practice will be discussed further in Chapter 3.<sup>141</sup> Taken together, the works of Amacher, Lucier, Teitelbaum, and Rosenboom, position the human body as a site of sound and listening. In a similar manner, Deep Listening grows awareness of outer sounds while also attempting to move seamlessly to inner sounds and spaces and notice how bodies interact with them.

#### Entities in the More-Than-Human World

Deep Listening also directs attention to others. Nonhuman bodies and entities, including environmental forces, listen and/or make sounds and mark acoustic signatures of spaces and places. Thus, the more-than-human world significantly informs human listening experiences. As with the herders discussed earlier in this chapter, certain cultures are deeply engaged in listening to their more-than-human environment which can be understood through Feld's concept of acoustemology, "grounded in the basic assumption that life is shared with others-in-relation ... that are variously human, nonhuman, living, nonliving, organic, or technological."<sup>142</sup> Such sonic interspecies interactions continue through today. Like cellist Beatrice Harrison and the nightingale, guitarist Jim Nollman, flutists Michael Pestel and Jim Denley, and clarinetist David Rothenberg have become well-known in Western music arenas for pushing against the idea that only humans can create music. Rothenberg, both a musician and philosopher, is known for "jamming" with animals like birds, bugs, and whales, trusting in their ability

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<sup>141</sup> David Rosenboom, interview by Pauline Oliveros, December 4, 1978, box 12, folder 30, Pauline Oliveros Papers, MSS 102, Special Collections & Archives, University of California San Diego.

<sup>142</sup> Feld, "Acoustemology," in *Keywords in Sound*, 15.

to listen to and create music with humans.<sup>143</sup> Pestel performs with birds, and Nollman, an animal rights activist, plays with various nonhuman animals and founded the nonprofit organization Interspecies Communication to advance creative interspecies interaction.<sup>144</sup> For the *In/With/As Weather* album series, Denley records with Australian areas like the Budawang Mountains. However, whether these species appreciate their potentially involuntary participation in these sonic interactions with humans remains unclear.<sup>145</sup>

Even so, an avid awareness, acceptance, and appreciation of more-than-human sounds is explored in manifold ways in the Deep Listening practice. Notably, Oliveros engaged in several interspecies experiences. For example, she performed with Ramón Sender, Morton Subotnick, Loren Rush, and various fish in a tank prepared with music staves for Sender's piece *Tropical Fish Opera* (1962) and with Laurel Johnson's pet bird Ahmed and David Tudor for her piece *Duo for Accordion and Bandoneon with Possible Mynah Bird Obbligato* (1964).<sup>146</sup> Additionally, Oliveros worked with Rothenberg,

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<sup>143</sup> A self-described interspecies musician, Rothenberg has authored books on the music of animals and recorded albums featuring performances with them. See "David Rothenberg," 2022, <http://www.davidrothenberg.net>.

<sup>144</sup> Jim Nollman, *Playing Music with Animals* (Folkways Records, 1982), CD.

<sup>145</sup> This can also bring about questions regarding authorship, agency, intellectual property, profit, and career gain, whether or not the nonhuman contributors are credited.

<sup>146</sup> Caitlin Schmid, "Why Not Include the Bird—Tudorfest, 1964," *New Music USA*, March 12, 2015, <https://newmusicusa.org/nmbx/why-not-include-the-bird-tudorfest-1964/>; Ryan Ross Smith, "A Practical and Theoretical Framework for Understanding Contemporary Animated Scoring Practices" (PhD thesis, Rensselaer Polytechnic Institute, 2016), ProQuest (10158560). See also "The San Francisco Tape Music Center, video 4," posted June 18, 2014, by University of California Press, YouTube, [https://www.youtube.com/watch?v=ql\\_wMkcuzZE](https://www.youtube.com/watch?v=ql_wMkcuzZE).

overtone singer Timothy Hill, and live cicadas (in captivity) to form the Cicada Dream Band in 2014 in New York City.<sup>147</sup>

Research suggests that connecting with the more-than-human world can positively impact human psychological, cognitive, and physiological well-being.<sup>148</sup> Some studies show that specific sounds, like ocean waves and birdsong, can lessen human stress, tension, and mental fatigue.<sup>149</sup> Even when people may not have physical access to those environments, “[r]ecorded sound has its own implications for wellbeing, which come from the stimulation of imagination rather [than] any realistic simulation of the experience of being outdoors.”<sup>150</sup> Though such effects will vary from person to person due to the subjective nature of listening, these findings provide valuable context of broader trends. Further, the more-than-human world benefits along with humans when viewed as interconnected and having value.<sup>151</sup>

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<sup>147</sup> “The Cicada Dream Band: Musician David Rothenberg on jamming with whales, birds and bugs,” CBC Radio, October 8, 2014, <https://www.cbc.ca/radio/asithappens/the-cicada-dream-band-musician-david-rothenberg-on-jamming-with-whales-birds-and-bugs-1.2902885>.

<sup>148</sup> Christina Rariden and Alison Kuhn, “An Introduction to Nature Prescribing: Health Benefits of Nature,” *Journal for Nurse Practitioners* 20, no. 10 (2024): 105161; Rachel M. Nejade, Daniel Grace, and Leigh R Bowman, “What is the Impact of Nature on Human Health? A Scoping Review of the Literature,” *Journal of Global Health* 12 (2022): 04099.

<sup>149</sup> Erin Largo-Wight, Brian K. O’Hara, and W. William Chen, “The Efficacy of a Brief Nature Sound Intervention on Muscle Tension, Pulse Rate, and Self-Reported Stress: Nature Contact Micro-Break in an Office or Waiting Room,” *Health Environments Research & Design Journal* 10, no. 1 (2016): 45–51; Nina Massey, “Sounds of Nature ‘Benefit Mental Health and Promote Environmental Protection’,” *Press Association*, March 22, 2022; Luca Queirolo, Teresa Fazia, Andrea Roccon, Elisa Pistollato, Luigi Gatti, Luisa Bernardinelli, Gastone Zanette, and Franco Berrino, “Effects of Forest Bathing (Shinrin-Yoku) in Stressed People,” *Frontiers in Psychology* 15 (2024).

<sup>150</sup> Victoria Bates, Clare Hickman, Helen Manchester, Jonathan Prior, and Stephanie Singer, “Beyond Landscape’s Visible Realm: Recorded Sound, Nature, and Wellbeing,” *Health & Place* 61 (2020): 10227.

<sup>151</sup> Kristian Brevik, John Adams, Benjamin Dube, Lindsay Barbieri, and Gabriel Yahya Haage, “Wellbeing in the More-Than-Human World,” in *Sustainable Wellbeing Futures: A Research and Action Agenda for Ecological Economics*, ed. Robert Costanza, Jon D. Erickson, Joshua Farley, and Ida Kubiszewski (Northampton, MA: Edward Elgar Publishing, 2020), 151–166.

Sonic awareness of the more-than-human world aligns with research in the “animanities, the more-than-human study of culture,” which rightly asserts that “modern sonic culture is unthinkable without the lives of animals.”<sup>152</sup> Western society historically viewed and heard animal bodies and voices in terms of difference, ultimately advancing an understanding of music as dependent on personhood – whether the musician was a human or nonhuman animal – and using song as a measure of worth.<sup>153</sup> Engaging in interspecies music through performance and listening can counter this, as the inclusive philosophy behind Deep Listening does.

Further, composer Tara Rodgers’s suggestion that “feminist epistemologies of sound might begin from perspective within the [sound] waves, attending to the politics of human and nonhuman encounters and interconnections”<sup>154</sup> allows artists and listeners a method to relate to others (including more-than-human environments) through sound, as in Deep Listening. While “assuming the animal standpoint is limited in what it can reveal to humans about the lives, preferences, desires, and mental states of NHAs [nonhuman animals],” mutuality for all participants is one way to approach interspecies music.<sup>155</sup> Deep Listening and select Indigenous modes of listening often hinge on listening to establish such mutuality, as the case studies in Chapter 5 will show.

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<sup>152</sup> Rachel Mundy, *Animal Musicalities: Birds, Beasts, and Evolutionary Listening* (Middletown, CT: Wesleyan University Press, 2018), 12, 3.

<sup>153</sup> Mundy, *Animal Musicalities*, 19.

<sup>154</sup> Tara Rodgers, “Toward a Feminist Epistemology of Sound: Refiguring Waves in Audio-Technical Discourse,” in *Engaging the World: Thinking after Irigaray*, ed. Mary C. Rawlinson (Albany, NY: State University of New York Press, 2016), 197.

<sup>155</sup> Sarah Vincent, “Interspecies Intersubjectivity: On Its Possibilities and Limitations,” *Southwest Philosophy Review* 31, no. 1 (2015): 145. See also Donna Haraway, *The Companion Species Manifesto: Dogs, People, and Significant Otherness* (Chicago, IL: Prickly Paradigm Press, 2003).

One also finds a history of listening to stones and rocks in various forms. Lithophones, or sounding stones, are used in cultures worldwide, including Paleolithic cave formations showing wear where they were struck to produce resonance.<sup>156</sup> Other examples include “rock gongs” and “ringing stones” in India, Bolivia, southeast Asia, Australia, and Africa; qing and bianqing in China; “singing stones” in Sweden; and “geological pianos” in Britain.<sup>157</sup> Composers also employ stones as sound sources. For instance, compiled by a composer’s collective, *The Frog Peak Rock Music Book* (1995) features stones as instruments. In this compilation, Christian Wolff instructs participants to “Make sounds with stones” in his text score “Stones”; Eva Karczag and Annea Lockwood improvise together, “sounding the resonances” and exploring intimacy with stones in “Rokke”; and Oliveros contributed a chart of actions like rubbing, clicking, shaking, dropping, and rolling to listen to and blend with small rocks for the commissioned “Pebble Music.”<sup>158</sup> Tan Dun draws from his childhood experiences of Chinese rituals when including “organic instruments” like stones in works such as *Ghost Opera* (1994), *The Map* (2002), *The First Emperor* (2006), and *Earth Concerto for stone and ceramic percussion and orchestra* (2009). Stones can also serve as inspiration, as in John Luther Adams’s *Inuksuit* (2009) for nine to ninety-nine percussionists where the

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<sup>156</sup> Iain Morley, *The Prehistory of Music: Evolutionary Origins and Archaeology of Human Musicality* (New York, NY: Oxford University Press, 2013), 115–119.

<sup>157</sup> Morley, *The Prehistory of Music*, 119–120; *Grove Music Online*, “qing,” by Alan R. Thrasher, 2001, <https://doi-org.ezproxy1.lib.asu.edu/10.1093/gmo/9781561592630.article.45371>. See also *Grove Music Online*, “lithophone,” by James Blades, 2001, <https://doi-org.ezproxy1.lib.asu.edu/10.1093/gmo/9781561592630.article.16776>.

<sup>158</sup> Daniel Goode, ed., *The Frog Peak Rock Music Book* (Lebanon, NH: Frog Peak Music, 1995), 79–80, 45–48, 75–78.

rhythmic layers mimic native Inuit rock formations.<sup>159</sup> This context of listening to stones informs the discussion of numerous artists, including Madsen and Kite in Chapter 5.

Listening to and with nonhuman animals and the more-than-human world often imbues Indigenous cultures. For example, Northeastern Brazilian rain prophets in Ceará rely on birdsong and frog sounds, along with other plant and animal patterns, to indicate drought or rainfall.<sup>160</sup> The prophets listen to an environment's inhabitants to learn about the needs and things to come. Listening to land is integral to many Indigenous practices and may entail creative output. For instance, Rocky Cree Elder William Dumas's "storying process involves a practice of deep listening, and it is something that he can do only when he is in particular places, attuning his senses to the messages that the land provides. When [he] says 'the land tells us the stories,' ... he means this in a more-than-symbolic way."<sup>161</sup> And in some cultures, "entities such as stones, wind, and other types of nonhuman forms also have the capacity to listen, to lose hearing, or to provoke silence."<sup>162</sup> Skwah artist and scholar Robinson ties in singing to, with, and/or for the land (instead of about it) as Indigenous orientations that call in responsibility for land as

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<sup>159</sup> "John Luther Adams, Inuksuit," Cantaloupe Music, 2025, <https://cantaloupemusic.com/albums/inuksuit>. See also Adams's piece *Prophecies of Stone* (2023); Sabine Feisst, "Music as Place, Place as Music – The Sonic Geography of John Luther Adams," in *The Music of John Luther Adams*, ed. Bernd Herzogenrath (Lebanon, NH: University Press of New England, 2012), 23–47.

<sup>160</sup> Michael B. Silvers, "Birdsong and a Song About a Bird: Popular Music and the Mediation of Traditional Ecological Knowledge in Northeastern Brazil," *Ethnomusicology* 59, no. 3 (2015): 390.

<sup>161</sup> Cariou, "Sweetgrass Stories," 339.

<sup>162</sup> Ana María Ochoa Gautier, "Silence," in *Keywords in Sound*, ed. David Novak and Matt Sakakeeny (Durham, NC: Duke University Press, 2015), 189.

nonhuman relations.<sup>163</sup> One Aboriginal example of environmental listening is *dadirri*, a contemplative practice which defines seasonal transitions with sonic markers and will be covered in the next chapter. Significantly, these practices share with Deep Listening an intimate connection between human and more-than-human environments through listening.

Listening to beings in the more-than-human world and listening to spaces intersects with Deep Listening, each involving a keen awareness of environments and the manifold vibrations therein. The presence of bodies alters how sound moves through space since “[t]he sound body is a material body that resonates (with) its environment, creating and conducting affect.”<sup>164</sup> Therefore, in listening to environments, we hear ourselves and others. Thinking of environments as interconnected entities and bodies can help humans bond with environments on a deeper level rather than interpreting them as anonymous and separated spaces. Paying attention to the sounds produced by bodies and entities, important goals of the Deep Listening practice, may advance a partnership ethic with environments, expanded on in the following chapters.

The Deep Listening practice draws on and connects to the listening theories and creative activities discussed above: listening to and with environments; spatialized acousmatics, acoustic ecology, and experimental music; and listening to bodies and entities. Deep Listening was preceded by Indigenous and other non-classical-music-based listening practices, as in *dadirri* and by Mongolian herders, Kaluli communities, and

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<sup>163</sup> Dylan Robinson and Cheryl L'Hirondelle, “Listening to the Songs of Indigenous Lands,” lecture for Music and Minorities Research Center, University of Music and Performing Arts Vienna, November 25, 2022, <https://mdw.vhx.tv/videos/mmrc-lecture-listening-to-the-songs-of-indigenous-lands-2022>.

<sup>164</sup> Kapchan, “Body,” 41. *Italicized in original.*

Ceará rain prophets, which continue in practice and should not be ignored. Questions now arise: What are the roles of environments in listening practices like dadirri and Deep Listening? How were these developed and practiced? What was Oliveros's path to Deep Listening, who collaborated with her in developing the Deep Listening network, and how did environmentalist efforts shape them? In the next two chapters, I address these and other questions.

## CHAPTER 3

### DEEP LISTENING WITH ENVIRONMENTAL AWARENESS ACROSS CULTURES

The concept of deep listening or listening deeply has a rich history with interpretations from various cultures across the globe. One well-known example was popularized by Thích Nhất Hạnh (1926–2022), a Zen Buddhist monk from Vietnam, who discusses mindful listening as a means for compassionate communication and healing, pointing out that “Deep listening nourishes both speaker and listener.”<sup>1</sup> An Indigenous example of deep listening is *dadirri*, a longstanding practice by Aboriginal Australians which demonstrates profound environmental and sonic awareness but is not often included in conversations about Western deep listening. Pauline Oliveros’s *Deep Listening* practice shares similarities with these approaches. While not directly affiliated with religious and non-Western contexts, her *Deep Listening* intersects with Asian, Indigenous, and Western listening traditions; such a broadened framing illuminates the existence of a much wider *Deep Listening* network.

This chapter and the next trace the history of *Deep Listening* in more or less chronological fashion and offer expanded perspectives not thoroughly explored in the existing literature. Additionally, they address environmentalist implications in deep listening, a fresh angle built on the context outlined in Chapter 2. In the discussion of works, the focus shifts away from analysis of “pitch, interval, and meter for the infinitely broader world of frequency, vibration, and physical time,” an approach reflective of sonic

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<sup>1</sup> Thích Nhất Hạnh, *The Heart of the Buddha’s Teaching* (New York, NY: Harmony Books, 2015), 86–87. See also Thích Nhất Hạnh, *For a Future to Be Possible: Commentaries on the Five Wonderful Precepts* (Berkeley, CA: Parallax Press, 1993).

materialism.<sup>2</sup> Frequency, perceptions of time, biological and environmental rhythms and patterns, human interactions with space, and embodied experiences serve as parameters to investigate creative works. I will also demonstrate how considerations of “inclusivity [as] an ongoing practice of expanding awareness”<sup>3</sup> for the self and others underlie the Deep Listening and dadirri practices, shifting traditional power dynamics and inviting awareness to all sounds and beings in a space without imposing judgment on them.

### **Indigenous Deep Listening**

Varying notions of deep listening are long-standing in many Indigenous cultures, distinctly and continuously shaped by their community, history, and environment. Many can be defined as “the ancient practice of tuning in to our Ancestors and deeper wisdom.”<sup>4</sup> Researcher Laura Brearley elaborates on several terms and practices of Indigenous deep listening in languages like Swahili, Chinese, Tamil, Malayalam, and Telegu, and it is important to recognize each as distinct and based in cultural context. For example, Blackfoot concepts of deep listening “reveal the links between language, land, knowledge, and how to live” in their cultural framework,<sup>5</sup> pointing to reliance on their

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<sup>2</sup> Christoph Cox, “Beyond Representation and Signification: Toward a Sonic Materialism,” *Journal of Visual Culture* 10, no. 2 (2011): 154.

<sup>3</sup> Sherrie Tucker and Ray Mizumura-Pence, “Introduction,” in *Improvising Across Abilities: Pauline Oliveros and the Adaptive Use Musical Instrument*, ed. Thomas Ciufu, Abbey Dvorak, Kip Haaheim, Jennifer Hurst, IONE, Grace Shih-en Leu, Leaf Miller, Ray Mizumura-Pence, Nicola Oddy, Jesse Stewart, John Sullivan, Sherrie Tucker, Ellen Waterman, and Ranita Wilks (Newark, NJ: Terra Nova Press, 2024), 3.

<sup>4</sup> “Listening to the Living World with Dr. Laura Brearley,” Talking Sticks event series, 2020, <https://www.talkingsticks.com.au/whats-on/listening-to-the-living-world-with-dr-laura-brearley>.

<sup>5</sup> Laura Brearley, “Deep Listening and Leadership: An Indigenous Model of Leadership and Community Development in Australia,” in *Restorying Indigenous Leadership: Wise Practices in*

traditional knowledge. This also relates to Steven Feld's notion of acoustemology, or knowing through sound, which he developed by visiting the Kaluli people in Papua New Guinea between the 1970s and 90s.<sup>6</sup> Further, certain Indigenous deep listenings can be modes of community leadership and used as research methodologies.<sup>7</sup> Field recordist Andrew Skeoch, in recounting his experiences listening to environments, shares,

As our oldest cultures teach, taking the time to listen is a way of caring. Implicitly, we are showing respect for the natural world by giving it our attention. Through this intention to listen, we are not passive, but actively creating something – a relationship between ourselves and what we become aware of.<sup>8</sup>

Such concepts of listening speak to the possible relationships between land and its inhabitants, both human and more-than-human, though the specific nature of the relationships varies across communities.

A notable example of Indigenous deep listening with environmental awareness is dadirri, practiced by Aboriginal people in the Daly River area in the Northern Territory of Australia. Dadirri comes specifically from the Ngan'gikurunggurr and Ngen'giwumirri languages.<sup>9</sup> It is tied to the community of Nauiyu, which is on land of the Aboriginal

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*Community Development*, 2nd ed., ed. Cora Voyageur, Laura Brearley, and Brian Calliou (Banff, CAN: Banff Centre Press, 2015), 105.

<sup>6</sup> See Steven Feld, "Acoustemology," in *Keywords in Sound*, ed. David Novak and Matt Sakakeeny (Durham, NC: Duke University Press, 2015); Tom Rice, "Acoustemology," in *The International Encyclopedia of Anthropology*, ed. Hilary Callan and Simon Coleman (Hoboken, NJ: John Wiley & Sons, 2018), 1–7.

<sup>7</sup> See Laura Brearley, *Gulpa Ngawal Indigenous Deep Listening* (Melbourne, AUS: RMIT, 2010); Roianne West, Lee Stewart, Kim Foster, and Kim Usher, "Through a Critical Lens: Indigenist Research and the Dadirri Method," *Qualitative Health Research* 22, no. 11 (2012): 1582–1590; Judy Atkinson, "Privileging Indigenous Research Methodologies," paper presented at the National Indigenous Researchers Forum, University of Melbourne, Australia, 2001.

<sup>8</sup> Andrew Skeoch, *Deep Listening to Nature* (Victoria, AUS: Listening Earth, 2023), 14.

<sup>9</sup> Today, English is the main language along with Kriol and multiple local languages and dialects, like Ngan'gikurunggurr. "Community Profile: Nauiyu, Top End Region," Remote Area Health Corps, 2013, [https://www.rahc.com.au/sites/default/files/pictures/RAHCMF17%20Community%20Profile\\_NAUIYU.pdf](https://www.rahc.com.au/sites/default/files/pictures/RAHCMF17%20Community%20Profile_NAUIYU.pdf)

Malak Malak people and served as a meeting place for trade and ceremonies before colonization.<sup>10</sup> Elder Miriam-Rose Ungunmerr-Baumann (b. 1950), an Aboriginal writer, artist, and educator, has been instrumental in spreading dadirri. She is a member of the Ngangiwumirr language group and Ngangikurungkurr people. Originally from Daly River and based in her home community Nauiyu, she was appointed a Member of the Order of Australia and received the honor of 2021 Senior Australian of the Year. She describes dadirri, which is both a concept and a spiritual practice, as “inner, deep listening and quiet, still awareness,” much like a form of contemplation.<sup>11</sup>

Significantly, listening is one of the main components of dadirri:

We learnt by watching and listening, waiting and then acting. Our people have passed on this way of listening for over 40,000 years ... There is no need to reflect too much and to do a lot of thinking. It is just being aware.<sup>12</sup>

Such a sonic awareness is inclusive of humans and the more-than-human world, guided by the geography and seasons (fig. 1).<sup>13</sup> Nauiyu, as a river community, has two main

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f; Gavin Morris, “Edge Of Sacred: Exploring The Life Stories Of The Nauiyu Community. An Investigation Into Trauma And The Traditional Healing Practices Of A Remote Aboriginal Community” (thesis, Charles Darwin University, 2019), DOI: 10.25913/5ebb25ee03fe6.

<sup>10</sup> “Community Profile: Daly River (Nauiyu),” Remote Area Health Corps, March 2010, [https://www.rahc.com.au/sites/default/files/documents/community\\_profiles/Daly%20River%20Community%20Profile.pdf](https://www.rahc.com.au/sites/default/files/documents/community_profiles/Daly%20River%20Community%20Profile.pdf). For more information about the area, see “Community Profile: Nauiyu, Top End Region”; Morris, “Edge Of Sacred.”

<sup>11</sup> “Dadirri,” Miriam Rose Foundation.

<sup>12</sup> “Dadirri,” Miriam Rose Foundation.

<sup>13</sup> The Daly River region geographically includes hot springs and gorges and comprises various ecosystems. The river itself is perennial and one of the largest systems in the Northern Territory of Australia. The Nauiyu community has two main seasons: dry and wet. The dry winter season between May and September, with temperatures between 59 and 91 degrees Fahrenheit, typically has a humidity range of twenty to fifty percent. The wet summer season, October to April, often begins with lightning storms and monsoons, bringing a humidity range of thirty to eighty-five percent, temperatures between 71 and over 100 degrees, and possible flooding. Within these main two seasons are thirteen seasons based on the lifecycle of native spear grass. See “Community Profile: Daly River (Nauiyu);” “Community Profile: Nauiyu, Top End Region”; Morris, “Edge Of Sacred”; Oppenheer, “Ngan’gi Seasons Calendar.”

seasons and thirteen sub-seasons based on the lifecycle of native spear grass.<sup>14</sup> Notably, the *sound* of the spear grass marks seasonal rhythms: “when the Wurrmuy, spear grass seed heads, are swollen and hanging heavily this is Taddo – that’s the sound when the wurrmuy knock together and open up,” signaling the end of rain and a full river.<sup>15</sup> Similarly, the first sound of thunder in the season prompts a response of sadness in the community for those who have passed and a time of healing and looking forward.<sup>16</sup>



Figure 1. Ngan’gi calendar of thirteen seasons. (Mark Oppenneer, “Ngan’gi Seasons Calendar,” Ethnos Project, November 14, 2013, <https://www.ethnosproject.org/ngangi-seasons-calendar/>.)

<sup>14</sup> Mark Oppenneer, “Ngan’gi Seasons Calendar,” Ethnos Project, November 14, 2013, <https://www.ethnosproject.org/ngangi-seasons-calendar/>.

<sup>15</sup> *Many Lands, Many Seasons*, episode 1, “Naiyu (Daly River),” produced by the Australian Broadcasting Corporation, posted May 29, 2022, by CSIRO, YouTube, <https://www.youtube.com/watch?v=O6PdSQQmgrl>.

<sup>16</sup> Oppenneer, “Ngan’gi Seasons Calendar.”

In describing dadirri, Ungunmerr-Baumann refers to the surrounding rhythms of bush, aquatic plants, insects, and reptiles: “To be still brings peace – and it brings understanding. When we are really still in the bush, we concentrate. We are aware of the anthills and the turtles and the water lilies.”<sup>17</sup> She highlights the listening of Aboriginal people and she calls for them to be heard as well in a reciprocal way. She proposes that dadirri is in everyone, and it is about community and the benefit of all.<sup>18</sup> Ungunmerr-Baumann works to bring knowledge about dadirri to more people and especially to Aboriginal groups as a way to navigate moving in the two worlds of Aboriginal and Western cultures. When Ungunmerr-Baumann feels strain from this tension and carrying the community, that is when she calls on dadirri to be refreshed and renewed.<sup>19</sup> Dadirri is a way to be restored.

Jens Korff proposes the following exercise in dadirri, which communicates its potential set up, practice, intention, and outcome:

Reserve a space regularly for about 5 minutes, in the morning or evening. Go outside if you can. Simply sit and look at and listen to the earth and environment that surrounds you.

Focus on something specific, such as a bird, a blade of grass, a clump of soil, cracked earth, a flower, bush or leaf, a cloud in the sky or a body of water, whatever you can see.

You can also let something find you, be it a leaf, the sound of a bird, the feel of the breeze, the light on a tree trunk. There’s no need to try, just wait a while.

Be still and silent and listen.

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<sup>17</sup> “Dadirri,” Miriam Rose Foundation.

<sup>18</sup> “Miriam-Rose Ungunmerr-Baumann,” posted July 13, 2010, by Eureka Street, YouTube, <https://youtu.be/k2YMnmrmBg8>.

<sup>19</sup> “Miriam-Rose Ungunmerr-Baumann,” Eureka Street.

Following this quiet time, there may be, on occasion, value in expressing in some way your experience of this quiet, still listening. You may wish to talk about the experience or journal, write poetry, draw, paint or sing. This needs to be held in balance - the key to dadirri is in simply being, rather than in outcomes and activity.<sup>20</sup>

The first paragraph reflects the regular and continuous practice of dadirri, which parallels the expectations of Deep Listening. Being outdoors is preferred, marking a partiality for open environments, but indoor experiences are not excluded. Dadirri encourages balanced attention to both the external world and one's inner self, a quality shared with Deep Listening. Through meditative listening and environmental awareness, dadirri embraces multispecies beings as contributors. Multisensory engagement through seeing, listening, and feeling hints at the surrounding environment communicating with the listener, in line with Brearley's definition of dadirri as listening to ancestors.<sup>21</sup>

Dadirri draws on "awareness of where you've come from, why you are here, where are you going now and where you belong,"<sup>22</sup> centering listeners in their immediate surroundings and facilitating an experience of their ecosystems and the biodiversity within. Through this practice, respectful listeners may recognize interconnectedness to the world and could potentially reduce perceived species hierarchies. Dadirri also invites contemplation of larger time scales, encompassing far away pasts and futures. In doing so, this emphasizes the plurality of temporalities and possibilities, expanding beyond a

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<sup>20</sup> Jens Korff, "Deep listening (dadirri)," Creative Spirits, February 22, 2022, <https://www.creativespirits.info/aboriginalculture/education/deep-listening-dadirri>.

<sup>21</sup> "Listening to the Living World with Dr. Laura Brearley," Talking Sticks event series.

<sup>22</sup> "2021 Senior Australian of the Year: Dr Miriam-Rose Ungunmerr Baumann AM," 3KND, February 1, 2021, <https://www.3knd.org.au/post/dr-miriam-rose-ungunmerr-baumann-am-2021-senior-australian-the-year>.

linear progression. This may allow for a simultaneous grounded immediacy in and larger worldview outside of an individual and the present moment.

The exercise instructions, conceived for a broad range of listeners, offer direction for various kinds of minds, revealing the inclusive aspect of dadirri. Practitioners can choose to focus their attention or wait for the attention to come to them. With the guidance “let something find you,” dadirri places the listener in the context of their surroundings as a being to be found, encouraging an anti-settler-colonialist reevaluation of the self as communal with the more-than-human world. This demonstrates human recognition of the land as a source of knowledge, as in certain Indigenous communities discussed previously.

“Be still and silent and listen” is the crux of the exercise and resonates with how Ungunmerr-Baumann describes dadirri. The meditative characteristic is clear, with the invitation to stillness and silence after either focusing or eliminating attention. Then comes the direction to listen. From what has preceded this instruction, we know that listening can be multi-sensory. Participants may take in external sounds physically close and far, be aware of their internal thoughts, think about their own contributions to the sonic environment, etc. The goal is listening, stillness, and a way of being, but it may also result in restoration of the listener, a reflection, or expression of art. The practice of dadirri can benefit practitioners through cultivating stillness and a chance to listen deeply on various levels.

Similar meditative and multi-sensory aspects appear in the Deep Listening practice developed by Oliveros, with many cultural influences based on Asian and Western trends, to be explored in the following section. By placing Deep Listening in

dialogue with dadirri, I set the stage for examining Oliveros’s complex relationship with other practices, especially noting critiques of her appropriating Indigenous (specifically Native American) ideas and traditions. For example, Tara Browner argues that Oliveros participated in the “whiteshamanism” trend popular at the time of her writing *Crow Two* (1975), a ceremonial opera centered on the Lakǎóta *Heyo ’ka* Dreamer figure.<sup>23</sup> Oliveros herself mentioned shamanism when listening to and trying to understand animals, saying “I am not a Shaman, but I’ve certainly studied (or read) about shamanism, and I feel the ability to transmute your consciousness to another consciousness, or another being, is a very interesting practice. I can’t say as I do that, but I recognize it.” However, she goes on to describe how her text piece *Angels and Demons* (1980), in which “Angels represent the collective guardian spirits ... [and] Demons represent the individual spirits of creative genius,” encourages participants to try and enter a “Shamanic state.”<sup>24</sup>

Despite such controversies, Oliveros and her collaborators have generously credited ideas and practices of various Indigenous and Asian cultures.<sup>25</sup> Oliveros likely would have cited dadirri if she knew of it given dadirri and Deep Listening’s close similarities in the aspects of listening to one’s surroundings in a meditative context. However, I have not found evidence that Oliveros was familiar with dadirri. Nonetheless,

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<sup>23</sup> Tara Browner, “‘They Could Have an Indian Soul’: *Crow Two* and the Processes of Cultural Appropriation,” *The Journal of Musicological Research* 19, no. 3 (2000): 243–263.

<sup>24</sup> Helen Bullard, “Interview with Pauline Oliveros: Listening to Cicadas (2013),” in *Posthumanism in Art and Science*, ed. Giovanni Alois and Susan McHugh (New York, NY: Columbia University Press, 2021), 221–222; Pauline Oliveros, “Angels and Demons,” in *Anthology of Text Scores*, ed. Samuel Golter and Lawton Hall (Kingston, NY: Deep Listening Publications, 2013), 179.

<sup>25</sup> For example, see the bibliographies in Pauline Oliveros, *Deep Listening: A Composer’s Sound Practice* (New York, NY: iUniverse, 2005); Pauline Oliveros, “Meditation Project for Winter Quarter,” 1973, box 11, folder 5, Pauline Oliveros Papers, MSS 102, Special Collections & Archives, University of California San Diego; Pauline Oliveros, *Software for People: Collected Writings 1963–80* (Baltimore, MD: Smith Publications, 1984); Carole Ione, *Listening in Dreams* (New York, NY: iUniverse, Inc., 2005).

the critical evaluation of Deep Listening from Indigenous artists and commentators warrants attention and will be further covered in Chapter 5.

### **Multicultural Trends for Western Deep Listening**

Many cultural movements in the United States directly impacted Oliveros and are detectable in elements of the Deep Listening practice. Namely, East Asian philosophies, feminism, and environmentalism preceded and influenced Deep Listening. This section sets the larger stage of such movements for understanding the development of the practice.

#### East Asian Philosophies

Since the 1960s and 1970s, many artists in the United States and elsewhere, including John Cage, Karlheinz Stockhausen, Éliane Radigue, and Oliveros, have explored East Asian philosophies, religions, and spiritual practices like Buddhism, karate, and Tai Chi.<sup>26</sup> These artists discovered how Buddhism encourages enlightenment and awakening to true reality with the goal of nirvana or the end of suffering.<sup>27</sup> This, along with a belief in nonhuman animal sentience and the tenet of doing no harm, points to an ethic of care.

Karate, originally from Okinawa and dating back to the 1300s, relies on body movement and awareness for unarmed combat; it was disseminated throughout Japan in

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<sup>26</sup> See, for example, Oliveros, *Software for People*; Kerry O'Brien, "Listening as Activism: The 'Sonic Meditations' of Pauline Oliveros," *New Yorker*, December 9, 2016; John Kapusta, "Pauline Oliveros, Somatics, and the New Musicology," *The Journal of Musicology* 38, no. 1 (2021): 1–31.

<sup>27</sup> Waka Takahashi Brown, "Introduction to Buddhism," Stanford Program on International and Cross-Cultural Education, December 2002, <https://fsi9-prod.s3.us-west-1.amazonaws.com/s3fs-public/Buddhism.pdf>.

the 1800s and later, in the 1940s, was taught to American G.I.s who helped propagate it in the United States through the 1960s and 70s.<sup>28</sup> Tai Chi, a Chinese martial art popularized in the United States by teachers such as Cheng Man Ching, draws from various styles (Chen, Yang, Wu, Sun, and Hao) to facilitate physical and mental health through slow, mindful, gentle movements and listening to one's self. Oliveros herself practiced these martial arts, and elements of Tai Chi especially are foundational to the movement modality of Deep Listening.

These body practices became associated with the counterculture movement in North America stimulated in part by opposition to the war in Vietnam. Additionally, more people moved from Asia to the United States after immigration law changes in 1965. As many imported Asian philosophies and practices circulated, they were modified and sometimes simplified in the process. For example, karate and Tai Chi influenced the Western field of somatics, which strives to develop holistic self-discovery by unifying the body and mind through movement, often tied to dance.<sup>29</sup> The somatics movement in the U.S. grew substantially in the second half of the twentieth century as North Americans absorbed a wide variety of European and Asian embodied practices. Originating in

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<sup>28</sup> Tony Perrottet, "The Centuries-Old Sport of Karate Finally Gets Its Due at the Olympics," *Smithsonian Magazine*, July 2021, <https://www.smithsonianmag.com/arts-culture/centuries-old-sport-karate-history-olympics-180977941/>.

<sup>29</sup> For more on the history and global influences of somatics, see Martha Eddy, "Somatic Practices and Dance: Global Influences," *Dance Research Journal* 34, no. 2 (2002): 46–62; Kelly Mullan, "The Art and Science of Somatics: Theory, History and Scientific Foundations" (master's thesis, Skidmore College, 2012), [https://creativematter.skidmore.edu/mals\\_stu\\_schol/89](https://creativematter.skidmore.edu/mals_stu_schol/89) T.

countercultural centers like the Esalen Institute in Big Sur, California, by the 1970s, the somatic teachings also found their way into music training.<sup>30</sup>

Oliveros grew aware of the above-mentioned practices in the 1960s and also benefited greatly from international music and art exchanges cultivated after World War II. As thinkers like Carl Jung and others examined Buddhist philosophies within their fields of study, so too did Oliveros develop music and ideas tied to Tibetan Buddhism, and she explored improvisation practices rooted in heightened sonic awareness, meditation, and embodied experiences.<sup>31</sup> About meditation specifically, she clarified that her definition was “to stay with something” and remain aware, which shares similarities with dadirri and Garth Paine’s somaphony.<sup>32</sup> Oliveros also worked with composers like Cage and Terry Riley who incorporated Asian ideas and musical styles into their creative practices.<sup>33</sup> For instance, Cage’s ideas and pieces around silence draw from his interest in Zen Buddhism. However, Oliveros did differentiate between Buddhist or religious deep listening and her own Deep Listening practice with primarily musical associations.<sup>34</sup>

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<sup>30</sup> Kapusta, “Pauline Oliveros, Somatics, and the New Musicology,” 6, 2. However, Theodore Gordon argues that Oliveros’s somatic practices drew from cybernetics rather than Eastern philosophies. See Theodore Gordon, “‘Androgynous Music’: Pauline Oliveros’s Early Cybernetic Improvisation,” *Contemporary Music Review* 40, no. 4 (2021): 401.

<sup>31</sup> Tracy M. McMullen, “Subject, Object, Improv: John Cage, Pauline Oliveros, and Eastern (Western) Philosophy in Music,” *Critical Studies in Improvisation* 6, no. 2 (2010), 1.

<sup>32</sup> Pauline Oliveros, “All sounds are music,” interview by Zenia Cleigh, 1979, box 12, folder 10, Pauline Oliveros Papers, MSS 102, Special Collections & Archives, University of California San Diego. See Garth Paine, “Acoustic Ecology 2.0,” *Contemporary Music Review* 36, no. 3 (2017): 171–181.

<sup>33</sup> Matthew E. Tote, “La Monte Young, Terry Riley, Pauline Oliveros and the Emergence of the American Postmodern Drone Aesthetic, 1957–1964” (MA thesis, Tufts University, 2010), 3, 5, ProQuest (1481059).

<sup>34</sup> Pauline Oliveros, *Deep Listening: A Composer’s Sound Practice* (New York, NY: iUniverse, 2005), xxiv.

## Feminism

Oliveros was deeply affected by the feminist movement and adopted feminist principles in her works.<sup>35</sup> Focused on justice and equality, second-wave feminism became prevalent in the 1960s and 1970s in response to anti-war and other political, societal, and cultural efforts. It was marked in part by Betty Friedan's iconic book *The Feminine Mystique*, published in 1963.<sup>36</sup> While first-wave feminism concentrated on women's right to vote, second-wave advocates pushed for greater participation of women in political, economic, and social spheres, wanting their voices to be heard. The second wave also coincided with the women's rights and women's liberation movement;<sup>37</sup> feminism, and specifically lesbianism, became associated with the radical women's liberation movement.<sup>38</sup> Third-wave feminism, starting in the 1990s, sought to be more intersectional and better acknowledge the role of race and class in feminist efforts. By virtue of challenging subordination, feminists often also reflect care and address equality concerns for members of the queer community. Oliveros's approach to Deep Listening is likewise rooted in these interests.

I further connect Deep Listening with the ecological branch of feminism, commonly called ecofeminism. Prominent since the 1970s and 1980s, this movement

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<sup>35</sup> O'Brien, "Listening as Activism"; Pauline Oliveros and Fred Maus, "A Conversation about Feminism and Music," *Perspectives of New Music* 32 (1994): 174–93.

<sup>36</sup> JoAnne Myers, "Feminism," in *Historical Dictionary of the Lesbian and Gay Liberation Movements* (Lanham, MD: Scarecrow Press, 2013), 181.

<sup>37</sup> Elinor Burkett, "Women's rights movement," in *Britannica Academic*, accessed July 25, 2023, <https://academic-eb-com.ezproxy1.lib.asu.edu/levels/collegiate/article/womens-rights-movement/77372>.

<sup>38</sup> Stephanie Gilmore, "Feminism," in *Encyclopedia of Lesbian, Gay, Bisexual and Transgender History in America*, ed. Marc Stein (Detroit, MI: Charles Scribner's Sons, 2004), 1:384.

explores the connection between the unjust treatment of both women and the more-than-human world, using a feminist lens to critically address and advance an environmental ethic.<sup>39</sup> These concerns about wide-ranging forms of oppression have also been extended to shed light on other exploited minority groups based on attributes like race, economic status, and/or sexuality.<sup>40</sup> The connection between genders and environments has been approached in a variety of ways – as in queer ecologies, critical feminist eco-socialism, ecowomanism, and global feminist environmental justice – lending complexity and plurality to the field.<sup>41</sup> Despite slight differences, factions often still hinge on the interconnectedness of all life and aim for equality through collaboration.<sup>42</sup> Oliveros’s Deep Listening practice is also underpinned by these concepts, and it particularly resonates with Merchant’s partnership ethic through a reliance on care and healing. An ethic of care based in the embodied knowledge of others can embrace interspecies communities, highlighting inclusivity.<sup>43</sup> Definitions of inclusion are commonly applied to humans as the “action, practice, or policy of including any person in an activity, system, organization, or process, irrespective of race, gender, religion, age, ability, etc.” that

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<sup>39</sup> Karen J. Warren, “Environmental Ethics: IV. Ecofeminism,” in *Encyclopedia of Bioethics*, 3rd ed., ed. Stephen G. Post (New York, NY: Macmillan Reference USA, 2004), 2:772, 774. See also Nancy Arden McHugh, “Ecofeminism,” in *Feminist Philosophies A-Z*, ed. Oliver Leaman (Edinburgh, SCT: Edinburgh University Press, 2007).

<sup>40</sup> Noël Sturgeon, “Ecofeminism,” in *The Blackwell Encyclopedia of Sociology* (2007), <https://doi.org/10.1002/9781405165518.wbeose003>.

<sup>41</sup> See Margarita Estévez-Saá and María Jesús Lorenzo-Modia, “The Ethics and Aesthetics of Eco-Caring: Contemporary Debates on Ecofeminism(s),” *Women’s Studies* 47, no. 2 (2018): 123–146.

<sup>42</sup> Myers, “Ecofeminism,” 170; Kathryn Miles, “Ecofeminism,” in *Britannica Academic*, accessed July 25, 2023, <https://academic-eb-com.ezproxy1.lib.asu.edu/levels/collegiate/article/ecofeminism/605372>.

<sup>43</sup> Michael Flower and Maurice Hamington, “Care Ethics, Bruno Latour, and the Anthropocene,” *Philosophies* 7, no. 2 (2022): 31; Kate Brelje, “More than Humans: A Case for Inclusion of Non-human Persons in Care Ethics,” *Essays in Philosophy* 24, no. 1–2 (2023): 87.

especially strives to grant equal opportunities to marginalized groups.<sup>44</sup> The notion of fair and equal treatment is an essential element.<sup>45</sup> Both Deep Listening and Merchant's partnership ethic privilege nonhierarchical relationships and encourage listening for inclusivity.

### Environmentalism

In the 1960s and 1970s, environmentalism, concurrent with the feminist and ecofeminist movements, loomed large and impacted Oliveros. In the United States, environmentalism is associated primarily with social and political movements, including preservation and conservation efforts. It grew partially "from the romantic and transcendentalist movements, which found moral and artistic inspiration in the natural world,"<sup>46</sup> as with the famous writer Henry David Thoreau. Connections with Romanticism are "critical of the Enlightenment rationalism ... that has led to the objectification of nature."<sup>47</sup> Publications by scientists, like Rachel Carson's survivalist book *Silent Spring* (1962), also heavily contributed to public concern and care for the health of the Earth and its inhabitants.

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<sup>44</sup> *Oxford English Dictionary*, "inclusion," 2023, [https://www.oed.com/dictionary/inclusion\\_n?tab=meaning\\_and\\_use](https://www.oed.com/dictionary/inclusion_n?tab=meaning_and_use); *Britannica Academic*, "intersectionality," 2024, <https://academic-eb-com.ezproxy1.lib.asu.edu/levels/collegiate/article/intersectionality/640466>.

<sup>45</sup> *Cambridge Dictionary*, "inclusivity," 2024, <https://dictionary.cambridge.org/us/dictionary/english/inclusivity>.

<sup>46</sup> Bob Pepperman Taylor, "Environmentalism," in *American Governance*, ed. Stephen Schechter, Thomas S. Vontz, Thomas A. Birkland, Mark A. Graber, and John J. Patrick (New York, NY: Macmillan Reference, 2016), 2:2.

<sup>47</sup> Scott John Hammond, "Environmentalism," in *Political Theory: An Encyclopedia of Contemporary and Classic Terms* (Westport, CT: Greenwood Press, 2009), 111.

However, environmentalist preservation and conservation have been critiqued for their protection of “a vision of wilderness entwined with a particular notion of whiteness,” as also seen in R. Murray Schafer’s idealization of an “untouched” soundscape.<sup>48</sup> As a multifaceted and sprawling phenomenon, environmentalism therefore has a variety of foci, theories, and applications, including both anthropocentric (human-centered) and biocentric (more-than-human-centered) approaches.<sup>49</sup> Applicable to my dissertation, political science scholar Bob Pepperman Taylor characterizes philosophies that emphasize the value of more-than-human qualities, like ecofeminism and deep ecology, as manifestations of radical environmentalism.<sup>50</sup>

Two philosophies connected to the environmental movement – the Gaia hypothesis and deep ecology – held special relevance for Oliveros’s Deep Listening practice. Russian geochemist Vladimir Vernadsky posited the biosphere theory that biological life, along with human thought (noosphere), affects how the earth changes.<sup>51</sup> In the 1970s, chemist James Lovelock expanded Vernadsky’s biosphere theory into the Gaia hypothesis, which positions Earth as self-stabilizing and all beings as interconnected.<sup>52</sup>

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<sup>48</sup> Miles A. Powell, *Vanishing America: Species Extinction, Racial Peril, and the Origins of Conservation* (Cambridge, MA: Harvard University Press, 2016), 191.

<sup>49</sup> Lorraine Elliott, “Environmentalism,” in *Encyclopædia Britannica Online*, 2020. For a history of environmentalism see John McCormick, *The Global Environmental Movement*, 2nd ed. (Hoboken, NJ: John Wiley & Sons, 1995).

<sup>50</sup> Taylor, “Environmentalism,” 2.

<sup>51</sup> See Vladimir Vernadsky, *The Biosphere*, ed. Mark A. S. McMenamin, trans. David B. Langmuir (New York, NY: Copernicus, 1998).

<sup>52</sup> James Lovelock, *Gaia: A New Look at Life on Earth* (New York, NY: Oxford University Press, 2000). First published 1979. This is now also referred to as Earth system science.

Oliveros alluded to Vernadsky's biosphere to describe environments when introducing her concept of the sonosphere.<sup>53</sup> She explained,

In my usage of the word, sonosphere is the sonorous or sonic envelope of the earth created by all vibrations set in motion by natural or technological forces that travel through earth from its core to beyond earth, air, fire and water as waves and phonons to receivers.<sup>54</sup>

Oliveros understood the biosphere as creating sound as vibrations both within and outside of human ranges of hearing and receivers (or listeners) as "all creatures ... of the earth and beyond."<sup>55</sup>

The concept of Gaia further shares elements with deep ecology,<sup>56</sup> a holistic environmental philosophy focused on the value and interconnectivity of living beings. Its platform of eight principles, developed by Norwegian philosopher Arne Næss and American environmentalist George Sessions, focuses on the importance of diversity in an ecosystem and ethical connections between species.<sup>57</sup> This connectivity also hinges on

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<sup>53</sup> See Pauline Oliveros, "Improvisation in the Sonosphere," *Contemporary Music Review* 25, no. 5–6 (2006): 481–482; Pauline Oliveros, "Auralizing in the Sonosphere: A Vocabulary for Inner Sound and Sounding," *Journal of Visual Culture* 10, no. 2 (2011): 162–168.

<sup>54</sup> Oliveros, "Auralizing in the Sonosphere," 167.

<sup>55</sup> Oliveros, "Auralizing in the Sonosphere."

<sup>56</sup> For example, see Stephan Harding, "Gaia Theory & Deep Ecology," posted July 8, 2013, by Dushyant Chaturvedi, YouTube, <https://www.youtube.com/watch?v=Jbfrl9Haj4&t=7s>; Marina Katinić, "Holism in Deep Ecology and Gaia-Theory: A Contribution to Eco-Geological Science, A Philosophy of Life or a New Age Stream?," *The Holistic Approach to Environment* 3 no. 1 (2013): 3–14; "How Deep is Your Ecology?," *Social Issues Research Centre*, 2022, [http://www.sirc.org/articles/how\\_deep.shtml](http://www.sirc.org/articles/how_deep.shtml).

<sup>57</sup> The eight deep ecology principles are:

1. The well-being and flourishing of human and nonhuman life on Earth have value in themselves (synonyms: inherent worth, intrinsic value, inherent value). These values are independent of the usefulness of the nonhuman world for human purposes.
2. Richness and diversity of life forms contribute to the realization of these values and are also values in themselves.
3. Humans have no right to reduce this richness and diversity except to satisfy vital needs.
4. Present human interference with the nonhuman world is excessive, and the situation is rapidly worsening.

the understanding that humans should not be at a higher level than other living beings; social and environmental justice is a key theme. In adopting the philosophy of deep ecology, an individual's worldview must shift and lead to change by action. With the goal of sustainable ecosystems in mind, deep ecologists support the idea that "humans don't just act upon nature, they *are* nature"; placing humans as part of environments rather than separate from them may begin reducing hierarchical conceptions of humans as superior<sup>58</sup> and more closely aligns with many Indigenous frameworks. Critics of deep ecology challenge its idealism and impracticalities,<sup>59</sup> yet many principles have gained new appreciation across different fields, also reflected in current Deep Listening practices and influential on its development.<sup>60</sup>

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5. The flourishing of human life and cultures is compatible with a substantial decrease of the human population. The flourishing of nonhuman life requires such a decrease.

6. Policies must therefore be changed. The changes in policies affect basic economic, technological, and ideological structures. The resulting state of affairs will be deeply different from the present.

7. The ideological change is mainly that of appreciating life quality (dwelling in situations of inherent worth) rather than adhering to an increasingly higher standard of living. There will be a profound awareness of the difference between big and great.

8. Those who subscribe to the foregoing points have an obligation directly or indirectly to participate in the attempt to implement the necessary changes.

From "The Deep Ecology Platform," Foundation for Deep Ecology, 2012, <http://www.deepecology.org/platform.htm>.

<sup>58</sup> Edwin F. Faulhaber, "Communicator Between Worlds: Björk Reaches Beyond the Binaries" (master's thesis, Bowling Green State University, 2008), 60, 64, [http://rave.ohiolink.edu/etdc/view?acc\\_num=bgsu1219186474](http://rave.ohiolink.edu/etdc/view?acc_num=bgsu1219186474). Music theorist Alexander Rehding similarly wrote, "We need to find ways in which human actions can be thought as *part* of nature." Alexander Rehding, "Music Theory's Other Nature: Reflections on Gaia, Humans, and Music in the Anthropocene," *19th-Century Music* 45, no. 1 (2021): 9.

<sup>59</sup> Naess did anticipate and respond to such critiques. For example, he argued for biospherical egalitarianism, but qualified with "in principle." He explained that "[t]he 'in principle' clause is inserted because any realistic praxis necessitates some killing, exploitation, and suppression." Patrik Baard, "Managing Climate Change: A View from Deep Ecology," *Ethics and the Environment* 20, no. 1 (Spring 2015): 40. See also Arne Naess, "The Shallow and the Deep, Long-Range Ecology Movement. A Summary," *Inquiry* 16, no. 1-4 (1973): 95.

<sup>60</sup> See Taylor McClaskie, "Listening Deeply: Music, Sound, and Deep Ecology in 1980s North America" (PhD diss., Case Western Reserve University, 2023), ProQuest (31892492).

Combined with East Asian philosophies, feminism, and Indigenous listening practices like *dadirri*, this provides a broad understanding of Deep Listening's multicultural origins. Tomie Hahn elucidates,

There has been some criticism about DL [Deep Listening] practices over the years ... To some degree these concerns have been focused on how DL practices are a patchwork of various cultures' traditions. As an ethnomusicologist this view makes sense. I view this "patchwork" as a mirror of Pauline's life history learning and embodying various practices that she learned over a long period of time (karate, taichi, Native American practices, and so on). In the US, from the 1950s forward into the 1990s, many of these practices were "in the air" (so to speak), and yet not easy to locate in the mainstream. It was difficult to find teachers, especially if one was not part of a community. Pauline embodied and expanded upon the traditions that she learned and created the foundational DL practices, the three modalities.<sup>61</sup>

Sound artists Stephanie Loveless and Freya Zinovief similarly acknowledge that these contexts along with the New Age movement and experimental music trends were entangled with cultural appropriation which therefore shaped Deep Listening, even if unintentionally.<sup>62</sup> The following section will expand on these ideas.

### **Evolution of Oliveros's Listening**

The term "Deep Listening" was not officially coined until the 1980s, but we can trace its development over the course of Oliveros's long creative journey, which I explore in two parts between this chapter and the next. The following sections feature early experiences that influenced Oliveros's listening practice, and Chapter 4 surveys the use and applications of "Deep Listening" after the term's official introduction. I consider,

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<sup>61</sup> Tomie Hahn, e-mail message to author, May 5, 2025.

<sup>62</sup> Stephanie Loveless and Freya Zinovief, "Listening to Our Listening: Deep Listening in Critical Sites," in *Situated Listening: Attending to the Unheard*, ed. Stephanie Loveless, Tullis Rennie, Morten Søndergaard, and Freya Zinovieff (London, ENG: Focal Press, 2025), 47; Stephanie Loveless, interview by author, June 27, 2025. Thank you to Stephanie for sharing about this chapter with me.

alongside Oliveros's prolific work and writings, that of her collaborators who expanded the Deep Listening concept and made space for and embraced a wide variety of voices. The chapters are also informed by my personal experience of and training in Deep Listening and by Carolyn Merchant's partnership ethic, which positions people and the more-than-human world as mutually beneficial; this allows me to study listening relationships in terms of care ethics which "can be compelling foundations for environmental ethics."<sup>63</sup>

### Early Listening Experiences

Born in 1932, Oliveros cultivated listening and sounding early in her life growing up in Houston, Texas. She recollected, "I can't remember a time when I wasn't interested in sounds."<sup>64</sup> She would listen to radio and phonograph static, whistling, and winding down, and background noise on records. She said, "I always had a way of listening to the sound where you were not supposed to be listening,"<sup>65</sup> to "in-between" sounds, a practice later encouraged by and in Deep Listening. She recounted composing in her mind at the age of sixteen,<sup>66</sup> which I interpret as an early example for her later ideas to hear sounds

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<sup>63</sup> Kyle Powys Whyte and Chris Cuomo, "Ethics of Caring in Environmental Ethics: Indigenous and Feminist Philosophies," in *The Oxford Handbook of Environmental Ethics*, ed. Stephen M. Gardiner and Allen Thompson (New York, NY: Oxford University Press, 2017), 235.

<sup>64</sup> *Sisters with Transistors: Electronic Music's Unsung Heroines*, written and directed by Lisa Rovner (2020), posted April 7, 2021, by Monoduo Films, Vimeo, <https://vimeo.com/ondemand/sisterswithtransistors>.

<sup>65</sup> Steve Silverstein, "Pauline Oliveros: Deep Listening, Composing, Just Intonation," *Tape Op* 41 (May/June 2004), <https://tapeop.com/interviews/41/pauline-oliveros/>.

<sup>66</sup> Louise Marshall, "Deep Listening: The Strategic Practice of Female Experimental Composers Post 1945" (PhD diss., University of the Arts London, 2018), 187, ProQuest (13873773). See also Pauline Oliveros, "Cues," *The Musical Quarterly* 77, no. 3 (Fall 1993): 376.

internally and investigate them externally in improvisations. This matches the process she outlined in Introduction II to *Sonic Meditations* which states,

Each Sonic Meditation is a special procedure for the following:

1. Actually making sounds
2. Actively imagining sounds
3. Listening to present sounds
4. Remembering sounds”<sup>67</sup>

Oliveros played piano, tuba, and horn, though accordion was her instrument of choice and she used it throughout her life for both collaborations and solo work. Stories recount how she extended her breath through the accordion,<sup>68</sup> possibly connecting with something more than herself. With modified and retuned models of the accordion, she also explored just intonation, based on acoustically pure intervals as a tuning system. Ultimately, her idea to “tune the soul” reveals her framing of sound and listening as transformative for healing and care.<sup>69</sup> This resonates with dadirri, which also brings balance through listening and environmental awareness without needing to entertain or create art.

Equipped with a magnetic tape recorder, Oliveros started recording everyday sounds as early as 1948 and recalled how the recording and playback technology helped

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<sup>67</sup> Pauline Oliveros, “Introduction II,” in *Sonic Meditations: March–November 1971* (Baltimore, MD: Smith Publications, 1974).

<sup>68</sup> Ximena Alarcón and Ron Herrema, “Pauline Oliveros: A Shared Resonance,” *Organised Sound* 22, no. 1 (2017): 8. See also Sabine Feisst, “Negotiating Freedom and Control in Composition: Improvisation and Its Offshoots after 1950,” in *The Oxford Handbook of Critical Improvisation Studies*, ed. George Lewis and Benjamin Piekut (New York, NY: Oxford University Press, 2016) 2:206–229; Sabine Feisst, “Losing Control: Indeterminacy and Improvisation in Music Since 1950,” *New Music USA*, March 1, 2022, <https://newmusicusa.org/nmbx/losing-control-indeterminacy-and-improvisation-in-music-since-1950/6/>.

<sup>69</sup> Oliveros, “All sounds are music.”

amplify her hearing, framing them as bodily extensions.<sup>70</sup> It was in 1953 while listening back to a tape recording made in her San Francisco apartment that she had a significant revelation, realizing,

Although I thought that I was listening while recording, I was surprised to find sounds on the tape that I had not heard consciously. With this discovery, I gave myself a meditation: “Listen to everything all the time and remind yourself when you are not listening”.<sup>71</sup>

Recording and playback technology helped expand her listening by filtering sounds in a different way than her human brain did. This pivotal moment was foundational for the Deep Listening practice, namely listening to everything always and listening without judging the sounds (eventually encompassed by Ione’s term “lift off judgment”). The notion that all sounds are worth listening to, also found in Cage’s *4’33”* (1952), underlies Oliveros’s revelation. A reliance on recording technology to broaden sonic awareness guides other artists as well, as the Chapter 5 case studies will show.

### New Music Technologies

New technologies facilitating recording and playback continued to inform Oliveros’s listening and relationship to sound. Starting in 1954, she studied with composer Robert Erickson at San Francisco State College, and he encouraged recording improvisations and listening back to them as a compositional tool. She adapted this in group sessions with fellow students Terry Riley, Loren Rush, and Ramón Sender to tape

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<sup>70</sup> Pauline Oliveros, “Tripping On Wires: The Wireless Body: Who is Improvising?,” *Critical Studies in Improvisation* 1, no. 1 (2004): 1–3. Also discussed in Gordon, ““Androgynous Music,”” 387.

<sup>71</sup> Pauline Oliveros, *Sounding the Margins: Collected Writings 1992–2009* (Kingston, NY: Deep Listening Publications, 2010), 28. See also Heidi Von Gunden, *The Music of Pauline Oliveros* (Lanham, MD: Scarecrow Press, 1983), 51.

improvisations as performances and experiment with tape-delay techniques.<sup>72</sup> She also met Stuart Dempster during this time, and he recalls “Improvisation was a regular impromptu ‘happening’ around the conservatory, and we were all involved.”<sup>73</sup>

By 1960, Oliveros used this method with a small group of women, including her partner at the time, Laurel Johnson. Most of the women in this group did not have formal music training, and they would use common objects like pots and pans to record an improvisation together before listening to the recording and discussing.<sup>74</sup> Oliveros commented that listening back to these tape-recorded group improvisations “granted a kind of agency to sound” and helped increase body awareness.<sup>75</sup> These experiences already reveal key elements of the Deep Listening practice such as working in groups, combining listening with improvisation, removing judgment, and involving one’s body in sounding and listening.

In 1962, Oliveros co-founded and co-directed the San Francisco Tape Music Center (SFTMC) with Sender and Morton Subotnick. The building they used also housed dancer Anna Halprin’s San Francisco Dancers’ Workshop, spurring interdisciplinary collaborations in dance, music, and performance art.<sup>76</sup> After meeting David Tudor in

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<sup>72</sup> Charles Shere, *Thinking Sound Music: The Life and Work of Robert Erickson* (Berkeley, CA: Fallen Leaf Press, 1995), 47; Pauline Oliveros, “Reverberations: Eight Decades,” *Jefferson Journal of Science and Culture* 2 (July 2012): 41–55.

<sup>73</sup> Stuart Dempster, “Loren Rush (b. 1935),” in *Interviews with American Composers: Barney Childs in Conversation*, ed. Virginia Anderson (Urbana, IL: University of Illinois Press, 2022), 291. Dempster also recalled that he, Riley, and Rush “became a kind of troika in support of Oliveros” at San Francisco State’s Composers Workshop; Stuart Dempster, e-mail message to author, October 25, 2023.

<sup>74</sup> Gordon, “‘Androgynous Music’,” 392.

<sup>75</sup> Gordon, “‘Androgynous Music’.”

<sup>76</sup> Johannes Goebel, “The San Francisco Tape Music Center 1961 <> NOW,” Google Arts & Culture, 2004, <https://artsandculture.google.com/story/the-san-francisco-tape-music-center-1961-lt-gt-now->

1963, Oliveros helped organize concerts in 1964 featuring the SFTMC composers and Tudor performing pieces by Cage and others. Cage's use in performances of contact microphones on acoustic instruments, in particular, showed Oliveros the possibilities of unpredictable acoustic and electroacoustic sonorities.<sup>77</sup> She used contact mics in her own music, as in *Apple Box* (1964) for amplified apple box and small objects, and also embraced unstable electroacoustic sounds, eventually manipulating sound processing and recording equipment in the studio, similar to Cage and Radigue amplifying and recording feedback.<sup>78</sup> Oliveros remembered the experience of amplifying difference tones as "one of those unforgettable moments of revelation. The sound felt fantastic."<sup>79</sup> Experiencing sound fully in the body links to somatic practices and also multi-directional and immersive surround sound experiences that composers like Cage and Stockhausen sought to achieve through multi-channel-based audio. Such setups allowed Oliveros to compose and improvise electroacoustic music in real time in an embodied manner, and it shaped her listening in new ways.

Her two-channel tape piece *Bye Bye Butterfly* (1965) is a notable example. Using a recording of Puccini's opera *Madama Butterfly* (1904), which was in the studio by chance, Oliveros processed its sounds in real time with oscillators, cascade amplifiers,

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empac/aAUhexzIc2ywOg?hl=en. See also Jacquelynn Baas, "Game Changer Anna Halprin," *Gagosian Quarterly* (Fall 2021), <https://gagosian.com/quarterly/2021/09/01/essay-game-changer-anna-halprin/>; Jacqueline Caux, dir., *Anna Halprin: Out of Boundaries* (2004), Numeridanse, <https://numeridanse.com/en/publication/out-of-boundaries/>.

<sup>77</sup> Gordon, "'Androgynous Music,'" 394.

<sup>78</sup> See Cathy van Eck, *Between Air and Electricity: Microphones and Loudspeakers as Musical Instruments* (New York, NY: Bloomsbury Academic, 2017).

<sup>79</sup> Oliveros, "Reverberations," 45. See also Pauline Oliveros, "Improvising Composition: How to Listen to the Time Between," in *Negotiated Moments: Improvisation, Sound, and Subjectivity*, eds. Gillian H. Siddall and Ellen Waterman (Durham, NC: Duke University Press, 2016), 75–90.

and delay, in the tradition of Schaeffer and Henry's *musique concrète*. The eight-minute piece begins with a high, sustained, somewhat grating electronic sound. The drone allows listeners to detect slight changes in timbre, volume, and pitch as complexity increases. Throughout, delay creates pulsing, rhythmic echoes and reverberant effects. When the *Madama Butterfly* recording enters, the vocal excerpts reflect the same delay and reverb treatment in addition to the electronic drones. Oliveros slides between oscillator pitches from grating high to rumbling low, eventually ending with a gradual fade.

Composer Sarah Weaver argues that elements of *Bye Bye Butterfly* such as “improvisational synthesis” and its drones are an early form of Deep Listening.<sup>80</sup> The physical interaction with sound and listening across timelines are other Deep Listening aspects. Listening and manually controlling the studio equipment brought an improvisatory and embodied quality to composing, and “[l]istening thus figures for Oliveros as an improvisation with the body.”<sup>81</sup> Drones – which became important building blocks for minimalist music composers including La Monte Young, Terry Riley, and Charlemagne Palestine – were often achieved by tape delay and could result in a variety of echo effects and reverberation.<sup>82</sup>

Oliveros remarked that, through such electronic music, “I began to find the sounds that interested me and were most similar to the sounds in my inner listening.”<sup>83</sup>

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<sup>80</sup> Sarah Weaver, “Roots for Deep Listening in Oliveros’s *Bye Bye Butterfly*,” *American Music Review* 47, no. 1 (Fall 2017): 7.

<sup>81</sup> G. Douglas Barrett, “Deep (Space) Listening: Posthuman Moonbounce in Pauline Oliveros’s *Echoes from the Moon*,” *Discourse* 43, no. 3 (2021): 338.

<sup>82</sup> Laura Pallanck, “Pauline Oliveros,” *Remix* 6, no. 3 (March 2004): 122.

<sup>83</sup> Oliveros, *Deep Listening: A Composer’s Sound Practice*, xxiii.

This can also be heard in her tape-delay piece of electronic source material *I of IV* (1967) in which she explores timbre through amplification of combination tones and repetition.<sup>84</sup> Using oscillators also permitted her access to sounds outside the human range of hearing, and she relied on the low difference tones of such frequencies for *Bye Bye Butterfly*.<sup>85</sup> The piece blurs the sounds of inner and outer environments via the detectable delay caused by the physical space between tape machines. The delay allowed Oliveros to listen to both past and future in real time, which listeners can also experience in the recording. In some ways, this foreshadows the improvisational 1989 *Deep Listening* album Oliveros co-created in a highly resonant cistern.

### Meditations

In 1967, after serving as the first director of the Mills College Tape Music Center, Oliveros began teaching at the University of California in San Diego (UCSD). During committee and faculty meetings, she would doodle on the back of department memos. Drawing was a habit she began as a child in school, and upon reflection, she discerned that many of her drawings were in fact mandalas.<sup>86</sup> Mandala in Sanskrit means “circle” and serves as a diagram for meditation in Hindu and Buddhist practices, sharing similarities with *dadirri* as contemplation. Oliveros used the mandala throughout her career to organize musical ideas and performer positionality (fig. 2).

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<sup>84</sup> Katherine Marie Setar, “An Evolution in Listening: An Analytical and Critical Study of Structural, Acoustic, and Phenomenal Aspects of Selected Works by Pauline Oliveros” (PhD diss., University of Southern California, 1997), 162, ProQuest (9902864).

<sup>85</sup> “Pauline Oliveros on the Power of Listening,” Red Bull Music Academy, 2016, <https://www.redbullmusicacademy.com/lectures/pauline-oliveros-lecture>.

<sup>86</sup> Oliveros, *Software for People*, 237. To view other drawings by Oliveros, see Notes and sketches, with list of tape pieces, 1960–1980, box 31, folder 1, Pauline Oliveros Papers, MSS 102, Special Collections & Archives, University of California San Diego.

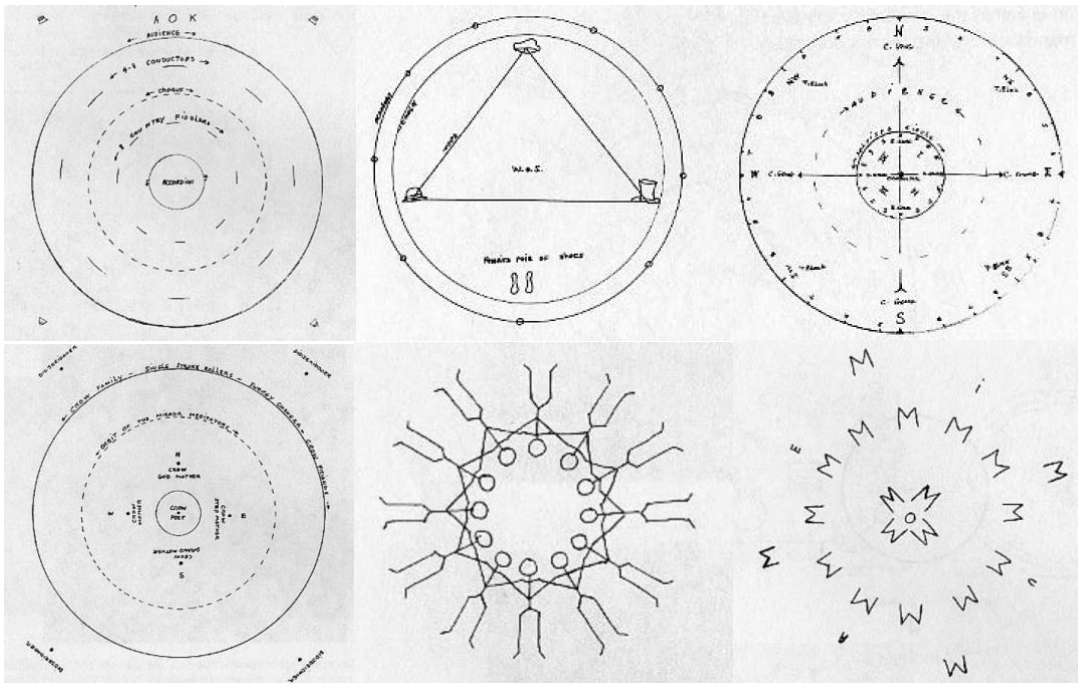


Figure 2. Mandalas in scores by Oliveros. *Left to right, top row: AOK* (1968), *The Wheel of Fortune* (1969), *Meditation on the Points of the Compass* (1970); *bottom row: Crow Two floor plan* (1975), *The Wheel of Life* (1979), *Lullaby for Daisy Pauline* (1984). (Pauline Oliveros, “MMM: Meditation/Mandala/Music,” in *Software for People: Collected Writings 1963–80* (Baltimore, MD: Smith Publications, 1984), 214–261.)

Ethnomusicologist Timothy Taylor points out that “Oliveros’s understanding of mandalas – and Buddhism in general – seems to derive most importantly from Carl Jung.”<sup>87</sup> Though Jung generalized about different Asian and Buddhist traditions, he gave significance to certain ideas like mindfulness (what Jung called consciousness), which Oliveros herself continued to research and explore.<sup>88</sup> Jung wrote, “He [the Buddha] says that whatever you do, do it consciously, know that you do it ... That is realization—not

<sup>87</sup> Timothy D. Taylor, “The Gendered Construction of the Musical Self: The Music of Pauline Oliveros,” *The Musical Quarterly* 77, no. 3 (Autumn, 1993): 394. Carl Jung wrote the book *Mandala Symbolism*.

<sup>88</sup> Michele Daniel, “Jung’s Affinity for Buddhism: Misunderstandings and Clarifications,” *Psychological Perspectives* 50, no. 2 (2007): 222, 226.

for one moment to be without realization. You must always know what you do ...”<sup>89</sup> This bears a striking resemblance to Oliveros’s earlier revelatory meditation to “Listen to everything all the time and remind yourself when you are not listening.”<sup>90</sup> Such connections demonstrate shared goals of consciousness and also place Oliveros and Jung within prevalent trends of the time, as discussed in this chapter’s first section.

Katherine Setar similarly points to writings of Jung, Joseph Campbell, Mircea Eliade, and American Indian musicians as a basis for Oliveros’s mandala pieces; Jung, in particular, framed mandalas as an archetype of collective unconscious and a means of healing.<sup>91</sup> Oliveros likewise strove for healing, as she explicitly outlined for pieces like the *Sonic Meditations* and *The Heart Chant* (2001).<sup>92</sup> She also referenced the cross archetype to visualize four ways of hearing sound (making, imagining, listening to, and remembering), which Heidi von Gunden explains as her theory of sonic awareness.<sup>93</sup> Ultimately, Oliveros used the mandala shape to visually depict Deep Listening. She pliantly adapted the shape for various functions, showing flexibility and also its

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<sup>89</sup> Carl G. Jung, *Nietzsche’s Zarathustra: Notes of the seminar given in 1934–1939*, ed. J. L. Jarrett (Princeton, NJ: Princeton University Press, 1988), 1334.

<sup>90</sup> Oliveros, *Sounding the Margins*, 28.

<sup>91</sup> Katherine Marie Setar, “An Evolution in Listening: An Analytical and Critical Study of Structural, Acoustic, and Phenomenal Aspects of Selected Works by Pauline Oliveros” (PhD diss., University of Southern California, 1997), 275, 364–365, ProQuest (9902864).

<sup>92</sup> Part of the text for *The Heart Chant* reads, “Can you imagine that the heart energies are joining together for healing yourself and others? Can you imagine heart energies traveling out into the universe as a healing for all victims and toward the end of violence?” Oliveros, *Deep Listening: A Composer’s Sound Practice*, 41. See also Oliveros, “Introduction II,” in *Sonic Meditations*.

<sup>93</sup> Heidi von Gunden, “The Theory of Sonic Awareness in the Greeting by Pauline Oliveros,” *Perspectives of New Music* 19, no. 1/2 (1980): 412.

importance in her life and creative practice. At the heart of these applications, she believed “in all uses, the mandala is a plan for action of some kind.”<sup>94</sup>

While at UCSD, Oliveros also founded the ♀ Ensemble, a combination of instrumentalists, vocalists, composers, visual artists, poets, and other creatives, mostly graduate students. This group of seven to ten women met regularly to explore music through improvisation in a meditative context. Members changed over time but included Oliveros, Bonnie Mara Barnett, Lin Barron, Joan George, Lynn Lonidier, Zina Louis, Pam Sawyer, Patricia Strange, Betty Wong, Shirley Wong, and Ellen Van Fleet. The group was composed of queer and straight women, and members also represented various cultures, including American, British, and Chinese. Oliveros would provide written agendas for their weekly meetings to facilitate nonverbal communication, sometimes designating other members to lead specific portions.<sup>95</sup> Meetings typically involved a themed sign-in, kinetic awareness or movement exercises, meditative listening and/or sounding, and prompts for reflection.<sup>96</sup> The origin of this type of ensemble can be seen in Oliveros’s San Francisco group of women who recorded improvisations together, and both groups reflect her interest in feminism. The collaborative ♀ Ensemble was instrumental in the development of the *Sonic Meditations* (1974), which reflect many Deep Listening qualities.<sup>97</sup>

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<sup>94</sup> Oliveros, *Software for People*, 222.

<sup>95</sup> Martha Mockus, *Sounding Out: Pauline Oliveros and Lesbian Musicality* (New York, NY: Routledge, 2008), 41.

<sup>96</sup> The Women’s Ensemble - Group meeting notes, 1971–1972, box 12, folder 3, Pauline Oliveros Papers, MSS 102, Special Collections & Archives, University of California San Diego.

<sup>97</sup> Oliveros, *Sonic Meditations*. She also credits a weekend trip with students to Joshua Tree National Monument in California as contributing to the creation and practice of the *Sonic Meditations*; see

The *Sonic Meditations* are a collection of sixteen text scores designed to increase conscious awareness and encourage healing. They grew from the ♀ Ensemble’s regular meetings as transcribed by Oliveros, and she used the meditations to acknowledge specific members, such as “Zina’s Circle” about Zina Louis. The sixteen scores originally published in 1971 were expanded to twenty-five in 1974. They can be performed by anyone regardless of musical training and consist of written or verbalized instructions, akin to the dadirri exercise outlined previously. The *Sonic Meditations* do not rely on recordings or playback technologies as Oliveros’s previous pieces did. While intended for groups to regularly study together, in current practice the meditations are also used in single incidents with new groups. Oliveros felt that people needed connections, and the scores could help facilitate that to exchange energy and ultimately “*be together well as human beings on a planet that is shared by all.*”<sup>98</sup> Scholars interpret this work and others, such as *To Valerie Solanas and Marilyn Monroe In Recognition of Their Desperation* (1970), as feminist for their potential “to open up to future moments with the capacity to take on new contexts and accordingly new understandings.”<sup>99</sup> As in other Deep Listening pieces by Oliveros, the *Sonic Mediations* are characterized by generous flexibility and a collaborative spirit, namely as the audience becomes participants.

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Pauline Oliveros, “My ‘American Music’: Soundscape, Politics, Technology, Community,” *American Music* 25, no. 4 (2007): 391.

<sup>98</sup> Oliveros, “My American Music,” 392–393; Setar, “An Evolution in Listening,” 316. Other composers at the time similarly explored improvisation-based text scores. See, for example, Karlheinz Stockhausen’s “intuitive music” with *Aus den sieben Tagen* (1968).

<sup>99</sup> Irene Revell, “Speculating on the ‘Feminist Performance Score’: Pauline Oliveros, Women’s Work and Karen Barad,” *Contemporary Music Review* 41, no. 2–3 (2022): 291. See also Julia Steinmetz, “In Recognition of Their Desperation: Sonic Relationality and the Work of Deep Listening,” *Studies in Gender and Sexuality* 20, no. 2 (2019): 119–132.

Oliveros commented on this inclusion as a way to commune with environments through sound and listening, balancing global and focal attention.<sup>100</sup> It also encourages environmental awareness. Inclusionary listening establishes positionality for the listener and their surroundings, like in *Collective Environmental Composition* (1975), which directs participants to find “listening places,” share them with others, respond, and ultimately connect the sounds from all the listening places. As Oliveros said, “If we also listen to include more and more of what might seem to be background noise[,] we perceive relationship to place.”<sup>101</sup> She incorporated the more-than-human world and its patterns in this listening, growing from her childhood sensitivity “to sounds of the elements and animal life,” and relied on scores “designed to engender creativity and build connections with others and the environment.”<sup>102</sup>

She was constantly aware of the more-than-human world around her. For example, as a child she spent time on her mother’s chicken farm “listening to them sing. On long, hot summer days they would sing very sustained, long songs.”<sup>103</sup> Additionally, in the notes for her synthesizer and tape-delay piece *Alien Bog* (1967), she says, “I was deeply impressed by the sounds from the frog pond outside the studio window at Mills. I loved the accompaniment as I worked on my pieces. Though I never recorded the frogs I was of course influenced by their music.”<sup>104</sup> Later, at UCSD, Oliveros commented on

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<sup>100</sup> Oliveros, “My American Music,” 395.

<sup>101</sup> Pauline Oliveros, *The Roots of the Moment* (New York, NY: Drogue Press, 1998), 12.

<sup>102</sup> Oliveros, *Software for People*, 181; Oliveros, *Sounding the Margins*, 263.

<sup>103</sup> Oliveros, “Cues,” 374.

<sup>104</sup> “Pauline Oliveros: Alien Bog/Beautiful Soop,” DRAM, 2000–2023, <https://www.dramonline.org/albums/pauline-oliveros-alien-bog-beautiful-soop/notes>.

ravens and crows in the area: “They seemed to arrive the day we opened the department, and they are still with us. They are like our totem,” inspiring the pieces *Crow Two* (1975) and *Crow’s Nest* (1979).<sup>105</sup> The chickens, frogs, and ravens centered her relationship with place, and their voices inspired her own imagination and production of sounds.

Importantly, other species’ sounds, like gibbon songs, are encompassed in her definition of music.<sup>106</sup> Additionally, Oliveros recalls how listening to a natural source of white noise during a sonic meditation dramatically altered her: “there was suddenly a great pulse through my body. I felt this pulse and I felt all the muscle sets in my body release. It effected a permanent change. From that point, I was different. I was more relaxed.”<sup>107</sup> This is consistent with Tom Bickley’s initial impressions of Oliveros being in “more direct engagement [than other composers] with environment, with nature.”<sup>108</sup> She and her compositional style were impacted by bringing awareness to the sonic more-than-human world. These examples also speak to Oliveros’s emphasis of moving outside the concert hall since the “paradigm is to perform in open space and include everything that is sounding.”<sup>109</sup>

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<sup>105</sup> Clippings - Reviews and mentions of Pauline Oliveros, 1981, box 17, folder 1, Pauline Oliveros Papers, MSS 102, Special Collections & Archives, University of California San Diego. See also Oliveros, “All sounds are music.” Notably, Oliveros’s UCSD farewell festival was called “Crow’s Fete.” Ravens and crows are different species, though colloquially their names are often used interchangeably to describe large black birds with glossy feathers.

<sup>106</sup> Pauline Oliveros, “Pauline Oliveros and the grand composition,” interview by Marcia Tanner, 1979, box 12, folder 15, Pauline Oliveros Papers, MSS 102, Special Collections & Archives, University of California San Diego.

<sup>107</sup> Pauline Oliveros, interview by Moira Roth, 1977, box 12, folder 14, Pauline Oliveros Papers, MSS 102, Special Collections & Archives, University of California San Diego.

<sup>108</sup> Tom Bickley, interview by author, May 14, 2025.

<sup>109</sup> Oliveros, “My American Music,” 391.

Moreover, Deep Listening's focal and global attention are comparable to the three modes of listening discussed by composer and acoustic ecologist Garth Paine: passive, directed, and active.<sup>110</sup> Passive listening, like Deep Listening's global attention, aims to hear the entire sonic environment as a whole. Directed listening is like focal attention with its anchor on the properties of a single sound. Active listening acknowledges the acoustic ecology of a place and the relationships between all sounds, like the balance of Deep Listening. Acoustic ecology's intersections with Deep Listening underscore its implications for environmental attention, as "environmental listening can be a powerful tool for encouraging community engagement, placemaking, stewardship, and agency in the face of climate change."<sup>111</sup>

As the Deep Listening practice and pieces grow sonic awareness, their inclusion of all sounds has ties with the philosophy of deep ecology. Musicologist Taylor McClaskie teases out similarities between Oliveros's "Listening Meditation" (1992) and the Deep Ecology Council of All Beings ritual where participants attempt to speak on behalf of other beings.<sup>112</sup> McClaskie also addresses philosophical differences, such as deep ecologists rejecting new technologies and Oliveros embracing technological devices

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<sup>110</sup> Garth Paine, "Acoustic Ecology 2.0," *Contemporary Music Review* 36, no. 3 (2017): 171–181.

<sup>111</sup> Garth Paine and Celia Yang, "Communal Listening for Climate Action," *Acoustic Ecology Review* 1, no. 1 (2023).

<sup>112</sup> Taylor McClaskie, "Cultivating Ecological Consciousness: Pauline Oliveros's Deep Listening as Deep Ecology," talk presented by Baker-Nord Center for the Humanities, October 27, 2020, posted November 6, 2020, by Case Western Reserve University, YouTube, <https://www.youtube.com/watch?v=s-OsRDLV1v8>.

like tape recorders in her listening practice.<sup>113</sup> I further argue that certain principles from the deep ecology platform materialize in the *Sonic Meditations*.

Oliveros's two introductions to the *Sonic Meditations* declare that anyone who wants to participate can, and they emphasize an improvisational nature, blurring the traditional lines of composer, performer, and audience. The majority of the meditations are environmentally related, with "Environmental Dialogue" and "Ear Ly" as the most overt. As a whole, the meditations introduce a new power dynamic: a continuous cycle of listening and sounding concerned with the voices of the more-than-human world.<sup>114</sup> This highlights ecological listening through a focus on relationships between all living beings, their sounds, and their environments. Relationships become important on multiple levels: between human and more-than-human sounds, between participants, within participants, and between participants and their surroundings.

The meditation "Ear Ly" endeavors for hierarchical reduction with the more-than-human world. The instructions are as follows:

1. Enhance or paraphrase the auditory environment so perfectly that a listener cannot distinguish between the real sounds of the environment and the performed sounds.
2. Become performers by not performing.<sup>115</sup>

Implied in the first instruction is the need to listen. Though "sounding with" is the core of this exercise, it is achieved through waiting, quiet, and listening, similar to the framework for *dadirri*. Such waiting allows for noticing changes, which positions sound as both a

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<sup>113</sup> McClaskie, "Cultivating Ecological Consciousness."

<sup>114</sup> Mockus, *Sounding Out*, 10.

<sup>115</sup> Oliveros, *Sonic Meditations*.

means and “metaphor for subjects in ongoing states of transformation and transduction.”<sup>116</sup> From there, participants are directed to match environmental sounds without drowning them out, teaching respect for voices in the surroundings. Through this, participants may hear themselves as part of their environment. As cultural theorist Dominic Pettman contends, such vocal imitation further

asserts [one’s] own identity while also putting such an identity under erasure. Many animals (including humans) may thus be creatures who continue to flesh themselves out in(to) the world, long after the first fall into ‘identity’ (or at least a sense of self) through vocal back-and-forths with others – and with the environment.<sup>117</sup>

This builds on research by animal intelligence scholar Lori Marino who posits that imitation requires bodily awareness and an understanding of acoustics.<sup>118</sup> This listening may also help participants identify “that each creature appears to have its own sonic niche (channel, or space) in the frequency spectrum and/or time slot occupied by no other at that particular moment.”<sup>119</sup> Additionally, it ties in with Deep Listening’s focus on awareness, not only of the self, but of others, environments, and their interactions. Listening to environments helps form identities through sound.

The provocative second instruction of “Ear Ly” calls for a shift by prompting the participant to not perform, instead sensitively understanding themselves as part of the

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<sup>116</sup> Tara Rodgers, “Toward a Feminist Epistemology of Sound: Refiguring Waves in Audio-Technical Discourse,” in *Engaging the World: Thinking after Irigaray*, ed. Mary C. Rawlinson (Albany, NY: State University of New York Press, 2016), 209.

<sup>117</sup> Dominic Pettman, *Sonic Intimacy: Voice, Species, Technics (or, How to Listen to the World)* (Stanford, CA: Stanford University Press, 2017), 59.

<sup>118</sup> Charles Siebert, “The Story of One Whale Who Tried to Bridge the Linguistic Divide Between Animals and Humans,” *Smithsonian Magazine*, June 2014, <https://www.smithsonianmag.com/science-nature/story-one-whale-who-tried-bridge-linguistic-divide-between-animals-humans-180951437/>.

<sup>119</sup> Bernie Krause, “The Niche Hypothesis: A Virtual Symphony of Animal Sounds, The Origins of Musical Expression and The Health of Habitats,” *The Soundscape Newsletter* 6 (June 1993): 5.

sonic environment.<sup>120</sup> “Ear Ly” requires global and focal attention (the two pillars of Deep Listening) and reduction of the participants’ ego to become fully aware of environmental sounds. This environmental awareness and realization could move focus from the self as Deep Listening “attunes the listener to potential space opened up by shared practices of attention.”<sup>121</sup> “Not performing” could also indicate listening without contributing sound. Making this adjustment, participants could try to sensitively negotiate their own ego with their environment. No end is signaled, possibly indicating this conscious awareness as a continued way of living.

The type of listening and performance encouraged by “Ear Ly” corresponds to many of the deep ecology principles. Principle 4, the comprehension of excessive human interference with the nonhuman world, could show itself most strongly after a performance of “Ear Ly.” While listening to the many more-than-human and human-made sounds and responsibly processing this experience could be challenging if participants are not used to the practice, such recognition points to other deep ecology principles: all life has value (Principle 1); diversity contributes to that value (Principle 2); and humans do not have the right to reduce that diversity (Principle 3). Ideally, these reflections would lead to action to appreciate life quality (Principle 7) and the motivation to become an agent of change (Principle 8).

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<sup>120</sup> This relates to Cage’s attempt to reduce ego: “Our business in living is to become fluent with the life we are living.” Wes Nisker, “John Cage and the Music of Sound,” *Inquiring Mind* 3, no. 2 (1986).

<sup>121</sup> Julia Steinmetz, “In Recognition of Their Desperation: Sonic Relationality and the Work of Deep Listening,” *Studies in Gender and Sexuality* 20, no. 2 (2019): 128.

The *Sonic Meditations* guide participants to balance listening to themselves and their surroundings (inclusively and exclusively<sup>122</sup>) to understand how they relate to everything else. This focus is pivotal to the Deep Listening practice.<sup>123</sup> In classes and with groups like the ♀ Ensemble, Oliveros experimented with such sonic awareness, including multi-sensory and relational listening. Today, group discussions following an exercise also allow participants to tell others about their observations, continuing to increase the group's overall sonic experience. In Chapter 5 we will also see Alarcón Díaz follow this model for group work with Latin American women, and an adaptation by Kite for movement and dreamwork.

By the late 1960s, Oliveros began to learn Tai Chi and practiced it at the Kairos growth center in Rancho Santa Fe.<sup>124</sup> In 1969, she worked with somatic dancer Elaine Summers in New York City to increase her kinetic awareness. After returning to California, and thanks to regular training with somatic dancer and Tai Chi instructor Chungliang “Al” Huang, Oliveros applied somatics to music. In fact, Huang’s influence is present in the *Sonic Meditations*, notably with the opening instruction of many scores to observe one’s breathing, which is how Huang began his classes.<sup>125</sup> From these somatic teachers and other practices, such as the “body language” of karate,<sup>126</sup> Oliveros

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<sup>122</sup> Oliveros, “My American Music,” 395.

<sup>123</sup> This relates to Cage’s idea to “let sounds be themselves rather than vehicles for man-made theories or expressions of human sentiments” in John Cage, *Silence* (Middletown, CT: Wesleyan University Press, 1961), 10.

<sup>124</sup> O’Brien, “Listening as Activism.”

<sup>125</sup> Kapusta, “Pauline Oliveros, Somatics, and the New Musicology,” 15.

<sup>126</sup> Von Gunden, *The Music of Pauline Oliveros*, 87–88.

heightened awareness of her own body and its knowledge.<sup>127</sup> Even her telematic work recognized the body, as artist-scholar Jason Robinson describes, “as a location for meaning that is referential, necessary, and contingent.”<sup>128</sup> She incorporated many of these body practices in her three-month 1973 Meditation Project at UCSD<sup>129</sup> which used biofeedback training to measure participants’ alpha waves and “modes of consciousness” resulting from daily awareness training.<sup>130</sup> Participants did *Sonic Meditations* along with exercises in kinetic awareness, concentration, and breathing informed by “experimental psychology, Zen philosophy, ... Indigenous studies, telepathy,” and more.<sup>131</sup> Understanding the body as a site of sound and listening is an important facet of Deep Listening, in line with the creative goals of such artists as Amacher, Lucier, Teitelbaum, and Rosenboom. The Meditation Project participants recorded their dreams for discussion and interpretation too,<sup>132</sup> foreshadowing elements of Deep Listening’s modalities and trainings.

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<sup>127</sup> Oliveros, “Pauline Oliveros and the grand composition.”

<sup>128</sup> Jason Robinson, “The Networked Body: Physicality, Embodiment, and Latency in Multisite Performance,” in *Negotiated Moments: Improvisation, Sound, and Subjectivity*, ed. Ellen Waterman and Gillian Siddall (Durham, NC: Duke University Press, 2016), 107.

<sup>129</sup> Setar, “An Evolution in Listening,” 325.

<sup>130</sup> Oliveros, “Meditation Project for Winter Quarter.” For more on Oliveros’s Meditation Project, see Tysen Dauer, “The Varieties of Minimalist Experience: The Roles of Psychological States in the Reception of American Minimalism during the Long Sixties” (PhD diss., Stanford University, 2020), <https://purl.stanford.edu/pc690tp8382>; Tysen Dauer, “Receptivity via Biofeedback in Pauline Oliveros’s Meditation Project,” paper presented at the Society for Music Theory conference, November 7, 2019; Tysen Dauer, “‘Shortcut to Satori’: Racialized Alpha Activity in Pauline Oliveros’s Meditation Project,” paper presented at the American Musicological Society conference, November 1, 2019.

<sup>131</sup> Alexandria Renata Smith, “Pauline Oliveros and Biofeedback,” paper presented at the American Musicological Society conference, November 16, 2024.

<sup>132</sup> Oliveros, “Meditation Project for Winter Quarter.”

Notably, the Meditation Project relied on sound and listening as a way for participants to interface with the Alpha-Metrics instruments measuring their alpha waves.

An instruction page by Bruce Rittenbach describes,

On the most fundamental level you will want to distinguish between the sound of alpha and that of no alpha. To start out, hold perfectly still, keep your eyes open (since most people have no alpha with their eyes open), and adjust the knob on the box someplace between 3 and 5 until you get a pitch which is more or less constant but is randomly wavering around. Then shut your eyes. Most people will hear a definitely [*sic*] periodic “warbling”. At any rate, the first distinction must be made between no alpha (small, random pitch fluctuation) and alpha (larger pitch changes that are periodic, i.e. warbling). After you have learned this, then you may try to understand the meaning in terms of which psycho-physical parameters you are unconsciously manipulating, causing the sound to come and go.<sup>133</sup>

In this context, it was specifically sound that allowed participants to listen to and learn about their internal bodily processes. Following a trend explored throughout this dissertation, the technological tools made such a sonic awareness possible.

Participants were instructed to keep a diary during the Meditation Project, with entries including “all feelings, ideas, observations, casual commentary, descriptions, attitudes, reactions, etc. concerning the training sessions, and the project” to be shared at points with others in the group.<sup>134</sup> One entry touts the project’s success stating, “I’ve noticed that my listening perception has increased in both what I hear and understanding/accepting it too.”<sup>135</sup> However, as Tyler Dauer has highlighted, the diary

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<sup>133</sup> Oliveros, “Meditation Project for Winter Quarter.”

<sup>134</sup> Oliveros, “Meditation Project for Winter Quarter.”

<sup>135</sup> Dauer, “The Varieties of Minimalist Experience,” 166.

entries also “reveal the diverse reception of the project and the *Sonic Meditations*” as some participants experienced frustration, disillusionment, and struggles.<sup>136</sup>

Though the biofeedback and EEG data was not analyzed at the time due to lack of funding, Oliveros indicated that the Meditation Project resulted in a more balanced distribution of alpha waves between the brain hemispheres for participants.<sup>137</sup> During this time she also regularly used the biofeedback equipment with Rittenbach and Lester Ingber to test the use of “respiration to control the pitch of an oscillator, and the amplitude of alpha brain waves to trigger the oscillator on and off,” ultimately resulting in new *Sonic Meditations*.<sup>138</sup> Markedly, her reliance on alpha waves as inspiration, tool, and metric differs from the biofeedback music produced by Alvin Lucier and David Rosenboom previously discussed in Chapter 2.<sup>139</sup> Oliveros’s use of biofeedback is another example of how she engaged with available equipment to observe and learn about her own listening and sounding practice.

The Meditation Project culminated with a performance of Oliveros’s interactive theater piece *Phantom Fathom* by the project participants and invited guests on March 10, 1973. The event “brought together the core activities of the Meditation Project, including the underlying ethos of tuning individuals into the universal unconscious.”<sup>140</sup>

The primarily nonverbal *Phantom Fathom* program listed three *Sonic Meditations* (“The

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<sup>136</sup> Dauer, “The Varieties of Minimalist Experience,” 176–177.

<sup>137</sup> Oliveros, *Software for People*, 160.

<sup>138</sup> Oliveros, *Software for People*, 163.

<sup>139</sup> Dauer, “The Varieties of Minimalist Experience,” 226.

<sup>140</sup> Dauer, “The Varieties of Minimalist Experience,” 176.

Greeting,” “The Snake,” and “Removing the Demon”) followed by an “exotic” pot luck and dream-telling ritual. Strikingly, “Removing the Demon” can be traced in work with the ♀ Ensemble, Meditation Project, and *Sonic Meditations*. In the published *Sonic Meditations*, the piece is titled “Removing the Demon or Getting Your Rocks Off” and the score reads:

Sit in a circle with persons facing in and out alternately. If the number in the group is odd, seat the left over person in the center. Each person except the center person has a pair of resonant rocks. Begin the meditation by establishing mentally a tempo as slow as possible. Each person begins independently to strike the rocks together full force maintaining the imagined tempo. When enough energy is present, shout a pre-meditated word. Once selected, the word remains the same. The shout is free of the established tempo, and may occur one or more times during the meditation. The center person is without rocks and selects a word, phrase or sentence to say or intone repeatedly either silently or audibly for the duration of the meditation.<sup>141</sup>

The score also includes three variations for more persons without rocks, incorporating repeated body movement, and doing the meditation in an outdoor environment. It is unclear from where the rocks are sourced, but full-force striking could be destructive to both rocks and participants, as multiple Project Meditation diary entries showed.

The main theme is externalizing internal processes, which could be interpreted as a mode of sharing. The circle arrangement again reflects the importance of mandalas for Oliveros and facilitates listening to others. Environmental awareness is not a clear directive in the score except in the outdoors variation, which clarifies keeping audible contact with another person. Participants could try to isolate themselves by focusing inward, but the sounds of rocks and shouts might keep them in the moment and influence the buildup of energy. However, this could also be a distraction. Working through such

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<sup>141</sup> Oliveros, *Sonic Meditations*.

an interplay allows practicing the balance between global and focal attention both internally and externally.

For *Phantom Fathom*, the invitees were instructed to bring a word or phrase to be used as a mantra throughout the evening, including in “Removing the Demon.” The Meditation Project participants had been regularly practicing the rock portion together. A recording from their sessions reveals their approach where “most words are repeated, some temporally scattered throughout the course of the performance ... and some repeated multiple times ... creating a drone-like effect.”<sup>142</sup> General reception of the piece by the Meditation Project group was mixed. One participant reflected “Casting out the Demon is by far the best thing we’ve done,” while others struggled, saying, “Don’t like rock hitting of others at all!! Getting all their stuff (vibrations).”<sup>143</sup> The rocks themselves impacted participant experiences, with diary entries mentioning their weight or strength (or lack thereof). Though the more-than-human world is embraced through the rocks, participant reflections typically center on the human experience, and the rocks are discussed as replaceable tools, not as fellow contributors. However, “Removing the Demon” remained important to Oliveros, evidenced by its inclusion in the *Sonic Meditations*.

The *Sonic Meditations* also grew from Oliveros’s experiences of exclusion (despite good relationships with artists) in the male-dominated electroacoustic music community. Her scores have been interpreted as a feminist response to “tackling the

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<sup>142</sup> Dauer, “The Varieties of Minimalist Experience,” 226.

<sup>143</sup> Dauer, “The Varieties of Minimalist Experience,” 173.

silence of women in musical and public life.”<sup>144</sup> Oliveros said that she was influenced by the concurrent women’s liberation and feminism movements, and she reflected this in the transformation of traditional structures, hierarchies, performance practices, and goals of her music.<sup>145</sup> The potential for widely differing and unpredictable outcomes in interpretations, based both on scores and new music technologies, could also reflect feminist ideals.<sup>146</sup> Further, Oliveros used her artist biography when first introducing the *Sonic Meditations* in 1971 in *Source Magazine* to publicly announce her lesbian identity, though she recognized her sexuality early in life and had been out since the 1950s.<sup>147</sup> Musicologist John Kapusta adds that “The ‘feminine principle’ that Oliveros sought to elevate and equalize [through works like *Sonic Meditations*] was none other than intuition—the very principle at the heart of the somatics movement.”<sup>148</sup>

Prevalent movements in the United States such as feminism, somatics, and environmentalism found expression in Oliveros’s meditative music. In this regard, Tara

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<sup>144</sup> Marshall, “Deep Listening,” 43.

<sup>145</sup> O’Brien, “Listening as Activism”; Marshall, “Deep Listening,” 153; Martin Hiendl, “Queer Composition: Subversive Strategies in Western Classical Music” (PhD diss., Columbia University, 2021), 19, ProQuest (28258759). Second- and third-wave feminism along with queer theory may have informed Oliveros’s thought and creative work as well; see Eloy Ramirez, “Queer Theory and Third-Wave Feminism in Pauline Oliveros’s Meditative Works” (MM thesis, University of Arizona, 2020), 6–7, 11–12, ProQuest (28025772). For more on Oliveros’s lesbian and feminist identities in relation to these theories and their contexts in North America from the 1960s–80s, see Mockus, *Sounding Out*.

<sup>146</sup> See Drake Andersen, “Spaces for People: Technology, Improvisation and Social Interaction in the Music of Pauline Oliveros,” *Organised Sound* 27, no. 2 (2022): 164–171; Irene Revell, “Speculating on the ‘Feminist Performance Score’: Pauline Oliveros, Women’s Work and Karen Barad,” *Contemporary Music Review* 41, no. 2–3 (2022): 281–294.

<sup>147</sup> Mockus, *Sounding Out*, 78; *Deep Listening: The Story of Pauline Oliveros*, directed by Daniel Weintraub (2022, Capone Productions); Sunny Sone, “Pauline Oliveros Emerges from the Underground,” *Texas Observer*, December 10, 2021, <https://www.texasobserver.org/pauline-oliveros-emerges-from-the-underground>.

<sup>148</sup> Kapusta, “Pauline Oliveros, Somatics, and the New Musicology,” 23–24.

Rodgers's statement that "the 'world of sound' may present novel opportunities for feminist worlding – for tracking relations of humans and nonhumans, and of the social and technological, and imagining possibilities for more ethical encounters among them" can also be applied to Deep Listening.<sup>149</sup> In the Deep Listening practice, sounds allow room for voices often unheard, and it is a means of sharing orientations and knowledge similar to *dadirri* and the Indigenous listening and sonic practices Feld sought to describe with his concept of *acoustemology*.

*Dadirri* is one example of how cultures rely on contemplative listening to broaden awareness of self and others. This predates Oliveros, providing a larger context for her creative work that would grow into Deep Listening. I have also reviewed the impactful trends that contributed to Deep Listening's development and highlighted particularly its underlying environmental aspects. Oliveros continued expanding this method of Deep Listening in the 1980s and beyond by systematizing the practice with others' help, to be discussed in the next chapter. As such, I provide a new and larger history of Deep Listening beyond Oliveros.

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<sup>149</sup> Tara Rodgers, "'What, for me, constitutes life in a sound?': Electronic Sounds as Lively and Differentiated Individuals," *American Quarterly* 63, no. 3 (2011): 517.

## CHAPTER 4

### DEEP LISTENING'S GROWTH THROUGH INTERDISCIPLINARY COLLABORATION AND COMMUNITY BUILDING

Through the research and creative work that led to the *Sonic Meditations* (1974), Pauline Oliveros laid the foundation for environmentally conscious ways of listening in much of her later work. In the following years, she developed her listening practice further, greatly benefitting from close collaborations with significant figures like Ione and Heloise Gold, whose contributions to Deep Listening's growth have proven invaluable but have remained underexplored in musicological literature. In this chapter I will show how these partnerships and work with other individuals such as Stuart Dempster and institutions including the Center for Deep Listening helped establish the Deep Listening practice and build a global community of listeners. The Center's contributions support a large international network which to date has not received detailed scholarly attention in musicology.

While listening is emphasized in both the name and definition of Deep Listening, it evolved to encompass listening and sounding, dreaming, and moving. Experiencing sound in each of these three categories, called modalities, is key to the practice.<sup>1</sup> The inclusion of dreams and movement are fundamental to Deep Listening, yet these aspects are not fully represented in musicological discourse. As a certified Deep Listening facilitator, I shed light on these vital modalities from the perspective of my own familiarity with them. This chapter highlights how Oliveros's Deep Listening endeavor

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<sup>1</sup> Pauline Oliveros, "My 'American Music': Soundscape, Politics, Technology, Community," *American Music* 25, no. 4 (2007): 392.

has expanded and also showcases the environmental awareness woven throughout its various facets.

### **Deep Listening Band**

In the 1980s, Oliveros began exploring Deep Listening more in performance and codifying its legacy. A patent application cites 1988 as her first use of “Deep Listening,”<sup>2</sup> and it has been a registered trademark since 2007, originally held by the Deep Listening Institute. The term “Deep Listening” emerged in 1988 as Oliveros made recordings with trombonist Stuart Dempster and vocalist Panaiotis (also known as Peter Ward). Dempster, a researcher and active performer of experimental music, was interested in the healing power of sonic vibrations, like Oliveros.<sup>3</sup> Panaiotis, as a composer at the time, produced music and sound design for plays, created tape and computer music, and developed works with audience participation, sharing similarities with Oliveros.<sup>4</sup> Together, the three formed the Deep Listening Band (DLB) and, in 1989, released the album *Deep Listening*.<sup>5</sup> The album’s four tracks were recorded by Al Swanson in the extraordinarily resonant Cistern Chapel in Port Townsend, Washington where the members performed together following Dempster’s invitation.<sup>6</sup>

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<sup>2</sup> “Deep Listening,” U.S. Patent and Trademark Office Official Gazette, April 22, 2003, TM 402, accessed June 2, 2023, [https://www.uspto.gov/web/trademarks/tmog/20030422\\_OG.pdf](https://www.uspto.gov/web/trademarks/tmog/20030422_OG.pdf).

<sup>3</sup> Ben McIlwain, “Stuart Dempster,” *International Trombone Association Journal* 39 (2011): 66.

<sup>4</sup> For a comprehensive list of works see “Panaiotis Muse,” 2024, <https://www.panaiotis.us/panaiotis-muse/>.

<sup>5</sup> Pauline Oliveros, Stuart Dempster, Panaiotis, *Deep Listening* (New Albion, 1989) CD.

<sup>6</sup> Pauline Oliveros, “Acoustic and Virtual Space as a Dynamic Element of Music,” *Leonardo Music Journal* 5 (1995): 21. The place is officially called the Dan Harpole Cistern at Fort Worden State Park in Washington.

The album showcases slowly waxing and waning drone-based sounds produced by a mix of sources, including accordion, trombone, didjeridu, voice, and whistling (via both mouth and mouthpiece). Even the final track, featuring shorter percussive sounds made from metal pieces and pipes, results in sustained tones due to the echoing environment's forty-five second delay. As Dempster describes, "It's as though the cistern itself is listening."<sup>7</sup> This recognition of the acoustic properties of the space recalls creative practices by Miriam-Rose Ungunmerr-Baumann, Edgard Varèse, John Cage, Alvin Lucier, and Maryanne Amacher. It also suggests an "ecological approach" to improvisation, defined by ethnomusicologist David Borgo as when the participants, instruments, and environments interact together.<sup>8</sup>

The Cistern Chapel recording experience was momentous for the development of Deep Listening. Reflecting on the experience, Oliveros wrote in the album liner notes,

Each composer represented in Deep Listening has a very individual style of composition. As we improvise together, and listen intensely to one another, our styles encounter in the moment, and intermingle to make a collective music. I call the result *deep listening*.<sup>9</sup>

She later recounted that writing these notes revealed many other activities as deep listening, too.<sup>10</sup>

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<sup>7</sup> Michael Schell, host, *Radio Eclectus*, podcast, episode 39, "Stuart Dempster interviewed," April 9, 2020, <https://www.mixcloud.com/RadioEclectus/radio-eclectus-039-stuart-dempster-interviewed-apr-9-2020/>.

<sup>8</sup> David Borgo, "Strange Loops of Attention, Awareness, Action, and Affect in Musical Improvisation," in *Music and Consciousness 2: Worlds, Practices, Modalities*, ed. Ruth Herbert, David Clarke, and Eric Clarke (New York, NY: Oxford University Press, 2019).

<sup>9</sup> Pauline Oliveros, *Deep Listening: A Workshop Manual* (Kingston, NY: Deep Listening Publications, 1998), 2.

<sup>10</sup> Oliveros, *Deep Listening: A Workshop Manual*, 2. Oliveros also mentions the cistern recording as impacting her 1988 coining of the term "Deep Listening" in Pauline Oliveros, *Sounding the Margins: Collected Writings 1992–2009* (Kingston, NY: Deep Listening Publications, 2010), viii. Further, Oliveros

The DLB continued performing and recording until 2011, with keyboardist David Gamper joining in 1990.<sup>11</sup> They played in various resonant spaces like caverns, cathedrals, a limestone quarry, and a lava cave.<sup>12</sup> Collaborations and residencies were crucial for the group, and their international presence was marked by both in-person and telematic events. Their use of telecommunications technology to collaborate across physical distances reminds of Amacher’s sonic telepresence projects, mentioned in Chapter 2, and points forward to Ximena Alarcón Díaz’s work like INTIMAL, detailed in Chapter 5. The DLB invited in guest musicians, artists, dancers, and writers such as Ione, Julie Lyon (Balliett) Rose, Thomasa Eckert, William O. Smith, and members of The Cornelius Cardew Choir.<sup>13</sup> Further, the group commissioned compositions from figures like Ellen Fullman, Thomas Buckner, Joe Giardullo, Fritz Hauser, Linda Montano, Joe McPhee, and Baikida Carroll, among others.<sup>14</sup> The open and inclusive spirit of the DLB reflects Oliveros’s own individual music practices.

During this period with the DLB, Oliveros consistently used environmental metaphors to describe Deep Listening. She depicted the practice as “going below the surface of what is heard, expanding to the whole field of sound while finding focus.”<sup>15</sup>

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told Dempster that she considered the earlier flexible composer/performance group Sounding/Way as a “predecessor/ancestor?” of the Deep Listening Band; Stuart Dempster, e-mail message to author, October 25, 2023.

<sup>11</sup> Gamper also played natural flutes and found instruments, and he helped develop Oliveros’s Expanded Instrument System (EIS).

<sup>12</sup> Stuart Dempster, “Deep Listening Band: A Short History,” Deep Listening Institute, 2019, <https://web.archive.org/web/20190213112824/http://deeplisting.org/site/content/dlbhistory>.

<sup>13</sup> Dempster, “Deep Listening Band;” Tom Bickley, interview by author, May 14, 2025.

<sup>14</sup> Dempster, “Deep Listening Band.”

<sup>15</sup> Oliveros, *Sounding the Margins*, 77.

Musicologist Holly Watkins argues that such metaphors of depth have roots in German Romanticism, which focused on inner feelings and spirituality.<sup>16</sup> Defining “deep” as related to “complexity and boundaries, or edges beyond ordinary or habitual understandings,” Oliveros coupled it with “listening” to indicate “learning to expand the perception of sounds to include the whole space/time continuum of sound – encountering the vastness and complexities as much as possible.”<sup>17</sup> This inclusive definition characterizes the practice itself and is evident in scores. For example, *Earth: Sensing/Listening/Sounding* (1992), which Oliveros categorized specifically as a Deep Listening piece, is a series of questions for growing awareness of sounds. Participants begin by lying on the ground in a circle and are guided to contemplate how any sound (near, far, internal, remembered, imagined, etc.) can relax or energize their body, opening them to be “increasingly aware of all the sounds possible to hear in any moment.”<sup>18</sup> By inviting them to imagine merging with the ground and listening as if their body were the earth, Oliveros uses environmental metaphors for expansive awareness of sonic worlds.

The importance of the more-than-human world as a source of knowledge is also reflected in concepts of temporality, or the way events are experienced, which varies from culture to culture. For example, some Aboriginal communities describe time as a

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<sup>16</sup> Holly Watkins, *Metaphors of Depth in German Musical Thought: From E. T. A. Hoffmann to Arnold Schoenberg* (Cambridge, ENG: Cambridge University Press, 2011), 2. See also Holly Watkins, “Sounding the Depths of Depth,” Berfrois, December 19, 2011, <https://www.berfrois.com/2011/12/holly-watkins-deep-music/>; Holly Watkins, “From the Mine to the Shrine: The Critical Origins of Musical Depth,” *19th Century Music* 27, no. 3 (2004): 179–207.

<sup>17</sup> Pauline Oliveros, *Deep Listening: A Composer’s Sound Practice* (New York, NY: iUniverse, 2005), xxiii.

<sup>18</sup> Oliveros, *Deep Listening: A Composer’s Sound Practice*, 32.

pond to illustrate its multidimensional properties,<sup>19</sup> and Australian anthropologist Bill Stanner explains The Dreaming concept as nonlinear “everywhen” connecting past, present, and future.<sup>20</sup> Similarly, Runa communities in Ecuador “hold a notion of the ‘living future’, where the future is interlinked with practices of everyday life and is also transcendental to themselves by being part of larger cultural relationships to animals and nature.”<sup>21</sup> We saw another example of this with the Nauiyu river community’s reliance on environmental sounds to mark seasonal changes, tied to dadirri.

Multiple studies in meditation and mindfulness strive to explain how time is perceived in altered states of consciousness. Common mindfulness practices often guide participants to consistently focus on the present moment without judgment, which can impact one’s relationship with time.<sup>22</sup> When reflecting back on a meditation experience, the quality and quantity of nontemporal information (like emotion, state of mind, and complexity) direct how the passage of time was felt; this means that, in some cases, “[t]he more attentionally demanding the activity performed during the temporal interval

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<sup>19</sup> Aleksandar Janca and Clothilde Bullen, “The Aboriginal Concept of Time and Its Mental Health Implications,” *Australasian Psychiatry* 11 Supplement (2003): S40–S44.

<sup>20</sup> W. E. H. Stanner, *White Man Got No Dreaming: Essays, 1938–1973* (Canberra, AUS: Australian National University Press, 1979), 23–24. See also “The Dreaming,” Working with Indigenous Australians, June 2020, [https://www.workingwithindigenoustralians.info/content/Culture\\_2\\_The\\_Dreaming.html](https://www.workingwithindigenoustralians.info/content/Culture_2_The_Dreaming.html).

<sup>21</sup> Geneviève Reid and Renee Sieber, “What is Time? Indigenous Conceptualizations of Time and the Geoweb,” 2015, [https://rose.geog.mcgill.ca/ski/webfm\\_send/405](https://rose.geog.mcgill.ca/ski/webfm_send/405).

<sup>22</sup> Sylvie Droit-Volet, Muriel Fanget, and Michaël Dambrun, “Mindfulness Meditation and Relaxation Training Increases Time Sensitivity,” *Consciousness and Cognition* 31 (2015): 86; Peter Lush and Zoltan Dienes, “Time Perception and the Experience Of Agency in Meditation and Hypnosis,” *PsyCh Journal* 8, no. 1 (2019): 43.

is, the longer the elapsed duration is retrospectively judged to be.”<sup>23</sup> Time feeling long or short can also depend on the chosen type of meditation.<sup>24</sup> If the elements of conscious awareness, affect, or time are extended or otherwise influenced by long resonances of drone sounds or gongs lacking meter, meditators may experience a sense of timelessness or altered time.<sup>25</sup>

Sonic sustain is important for temporality in the context of Deep Listening and the DLB. In exceedingly resonant spaces like the cistern, listening to everything always (attentionally demanding) with slowly changing sounds (drone-like) could alter time perception for performers and listeners. Deep Listening scores further encourage this sense of timelessness for listeners by inviting expanded sonic awareness through participatory and meditative pieces. For example, “Teach Yourself to Fly,” a short text piece from the *Sonic Meditations*, guides participants to gradually introduce voice to their breath, becoming drone-like and possibly altering their sense of time. Oliveros herself noted this phenomenon during the vocalization portion,<sup>26</sup> echoing research demonstrating that musical tempo is “one of the major factors associated with the emotional arousal that

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<sup>23</sup> Sylvie Droit-Volet, Magali Chaulet, Frederic Dutheil, Michaël Dambrun, “Mindfulness Meditation, Time Judgment and Time Experience: Importance of the Time Scale Considered (Seconds or Minutes),” *PLoS One* 14, no. 10 (2019).

<sup>24</sup> Peter Sedlmeier, Isabell Winkler, and Anastasia Lukina, “How Long Did the Time Spent in Meditation Feel? ‘Attention. Attention.’,” *Psychology of Consciousness: Theory, Research, and Practice* 10, no. 4 (2023): 347.

<sup>25</sup> Damisela Linares Gutiérrez, Stefan Schmidt, Karin Meissner, and Marc Wittmann, “Changes in Subjective Time and Self during Meditation,” *Biology* 11, no. 8 (2022): 1116; Jason D.K. Noble, “What Can the Temporal Structure of Auditory Perception Tell Us About Musical ‘Timelessness’?,” *Music Theory Online* 24, no. 3 (2018).

<sup>26</sup> Katherine Marie Setar, “An Evolution in Listening: An Analytical and Critical Study of Structural, Acoustic, and Phenomenal Aspects of Selected Works by Pauline Oliveros” (PhD diss., University of Southern California, 1997), 382, ProQuest (9902864).

leads to distortions in temporal judgments.”<sup>27</sup> Emotions and surroundings also impact a human sense of time.<sup>28</sup>

Drone-based music that accompanies meditations or is produced in Deep Listening pieces often lacks meter. As music theorist Kristina Knowles posits,

metered music (which affords future-oriented attending) allows listeners to increase their attentional span, enabling them to make longer range predictions about upcoming events based on the current unfolding events, while non-metered music narrows the attention to a smaller span restricted to the unfolding “now.”<sup>29</sup>

This connects many Deep Listening exercises to mindfulness meditation practices with an “internal time-consciousness in which past and future are continually altering in cognitive time as they are apprehended from a changing present.”<sup>30</sup> In other words, non-metered Deep Listening works impart a timelessness for the meditative “now,” different than perceptions of time in Western music. In this way, focused Deep Listening allows listening across time. Moreover, being in the now “is a direct coping with our environment.”<sup>31</sup>

Such flexibility with time also ties to Oliveros’s interests in Asian philosophies, meditation practices, biofeedback research, and recording technology. Additionally, “the

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<sup>27</sup> Sylvie Droit-Volet, Danilo Ramos, José L. O. Bueno, and Emmanuel Bigand, “Music, Emotion, and Time Perception: The Influence of Subjective Emotional Valence and Arousal?,” *Frontiers in Psychology* 4 (2013): 417.

<sup>28</sup> Maja Marijan, “The Perception and Organization of Time in Music,” *Accelerando: Belgrade Journal of Music and Dance* 3, no. 3 (2018).

<sup>29</sup> Kristina Leigh Knowles, “The Boundaries of Meter and the Subjective Experience of Time in Post-Tonal, Unmetered Music” (PhD diss., Northwestern University, 2016), 200, ProQuest (10160530).

<sup>30</sup> Georgina Born, “Making Time: Temporality, History, and the Cultural Object,” *New Literary History* 46, no. 3 (2015): 368.

<sup>31</sup> Simon Høffding, “Phenomenology,” in *The Oxford Handbook of Western Music and Philosophy*, ed. Tomás McAuley, Nanette Nielsen, Jerrold Levinson, and Ariana Phillips-Hutton (New York, NY: Oxford University Press, 2021).

tape recorder in particular has had a profound impact on musical time.”<sup>32</sup> For Oliveros, it provided a mechanical memory with “the past inside the present, projecting into the future.”<sup>33</sup> This is also evident in the Expanded Instrument System (EIS), processing software which Oliveros called a “time machine” because “performers deliver the present moment of sounding to the system, and EIS feeds the present back in the future either through duplication or modification,” facilitating performance with time and space.<sup>34</sup> By freeing participants from entrainment or prediction, the Deep Listening practice allows for experiencing sound fully in the present.<sup>35</sup>

### **Deep Listening Retreats and Modalities**

In 1991, dancer Heloise Gold invited Oliveros to facilitate the first Deep Listening retreat at Rose Mountain Retreat Center in New Mexico, with Ione joining in later years.<sup>36</sup> These multi-day retreats continue through today, combining listening, dreaming, and moving modalities, which Deep Listening mentor Michael Reiley describes as three “rivers leading to the same ocean of awareness.”<sup>37</sup> The modalities are

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<sup>32</sup> Jonathan D. Kramer, “New Temporalities in Music,” *Critical Inquiry* 7, no. 3 (1981): 543.

<sup>33</sup> Kyle Bates, “Three Engrams: Human and Mechanical Memory: Temporality in Experimental Electronic Composition” (MFA thesis, Mills College, 2021), 10, 23, ProQuest (28539974).

<sup>34</sup> Senem Pirlir, “Disruption, Dis/orientation, and Intra-Action: Recipes for Creating a Queer Utopia in Audiovisual Space” (PhD diss., Rensselaer Polytechnic Institute, 2019), 87, ProQuest (13899883). The EIS has been in development since the 1960s.

<sup>35</sup> This is similar to how Noble frames minimalist music in Noble, “What Can the Temporal Structure of Auditory Perception Tell Us About Musical ‘Timelessness’?”

<sup>36</sup> Oliveros, *Deep Listening: A Workshop Manual*, 3. Heloise Gold’s brother Andy Gold founded Rose Mountain and Heloise taught Tai Chi retreats there; Heloise Gold, interview by author, November 17, 2023.

<sup>37</sup> Michael Reiley, e-mail message to author, June 17, 2025.

set up in such a way that a different person is responsible for each, though there is significant crossover between them. While Oliveros was living, she led the listening and sounding portion, Ione led dreaming, and Gold led moving (fig. 3).<sup>38</sup>



Figure 3. *Left to right, Ione, Pauline Oliveros, Heloise Gold.* (“About Deep Listening,” The Center for Deep Listening, updated 2021, <https://www.deeplisting.rpi.edu/deep-listening/>.)

In all modalities, improvisation and indeterminacy are vital elements for participants and facilitators, with many Deep Listening meditations presented spontaneously rather than pre-planned or previously written down. It is common to talk as a group after finishing a meditation or piece. This provides the space for participants to tell each other about their personal experiences, therefore informing the rest of the group about individual thoughts and feelings. Retreats also incorporate periods without talking, such as breakfast where participants can communicate about their dreams through sounds other than words.

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<sup>38</sup> Oliveros, Ione, and Gold led retreats together until 2015. Currently, Deep Listening teacher Jennifer Wilsey leads the listening and sounding portion.

Being attentive to others is a core part of relational ethics in music,<sup>39</sup> and in Deep Listening contexts, improvisations and discussions can cultivate this awareness of others, ideally with reduced judgment. Then, as Deep Listener Tomie Hahn describes, “Awareness of potential possibilities offers insights into imaginable choices of direction, sonic or otherwise.”<sup>40</sup> After attending early retreats, teacher Tom Bickley sensed,

... it was just transformative. ... the work with not only Pauline, of course, but with Ione and with Heloise really felt so integrating for me and had a sense of pieces of life that were missing, and a desire for a greater wholeness. ... I feel like I experienced both a breaking openness of grieving and a vision of what potentially could be. ... So that retreat was so eye opening, ear opening, self opening that I knew I needed to go back. ... And each time was just amazing. You know, I just entered this other world in which I felt like I was really at home and really myself.<sup>41</sup>

Listening to self and others brought these changes, healing, and reconsideration of perspective.

Facilitators and teachers have mentioned the importance of the retreat environment near the southern Rocky Mountains bordering the Santa Fe National Forest for the development of the Deep Listening practice.<sup>42</sup> Dempster recounts, “There were lots of trees and granite boulders and rocks, a beautiful setting. One exercise was to go up to various trees, for instance, and feel the various tree auras without actually touching the

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<sup>39</sup> Bruce Ellis Benson, “Improvisation,” in *The Oxford Handbook of Western Music and Philosophy*, ed. Tomás McAuley, Nanette Nielsen, Jerrold Levinson, and Ariana Phillips-Hutton (New York, NY: Oxford University Press, 2021).

<sup>40</sup> Tomie Hahn, “Sputtering Rituals: Remembering Pauline Oliveros as Improvisation-in-Action,” *Critical Studies in Improvisation* 12, no. 2 (2018): 2.

<sup>41</sup> Bickley, interview by author.

<sup>42</sup> “Rose Mountain Retreat Center,” accessed February 5, 2025, <https://www.rosemountaincenter.org/home>.

trees themselves.”<sup>43</sup> Another profound exercise was lying on the boulders while listening for long periods of time and then creating pieces based on what was heard, felt, perceived, and dreamt.<sup>44</sup> Gold emphasized the significance of the locale saying,

We were basically immersing ourselves in this big, beautiful experiment of learning how to listen with our whole bodies in nature. Listening, moving, and sounding, and the mysterious beauty of our dreams – I think of them as our tools, and then the wilderness was our playground and our teacher.<sup>45</sup>

Sounds and listening will differ from moment to moment and place to place, and the retreat setting allowed for slowing down and making room to sensitively listen to and process thoughts, feelings, and experiences before responding.<sup>46</sup> Bickley recalls how that mindset could then apply in interactions with others, commenting,

Pauline certainly modeled not being, you know, reactive. ... that’s also part of Deep Listening for any of us ... how can you listen to something you don’t want to hear. ... How can you attend and be present? So that there’s both the side of how do you honor someone by listening to them, but also, how can you, in a sense, step back from your ego construct to be present? And that has such strong political and social ramifications.<sup>47</sup>

This result could come in part from the environmental awareness cultivated through Deep Listening. I expand on examples below to further explore the impact of environmental listening on each modality and its facilitator, an approach currently missing in the musicological literature about Oliveros’s Deep Listening practice. Additionally, as a

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<sup>43</sup> Dempster, e-mail message to author.

<sup>44</sup> Gold, interview by author. Also discussed by Tara Bhattacharya, Stuart Dempster, Heloise Gold, Ione, and Daniel Weintraub Q&A following the Texas premiere of *Deep Listening: The Story of Pauline Oliveros*, directed by Daniel Weintraub (2022, Capone Productions) on November 12, 2023 by the Austin Film Society in Austin, Texas.

<sup>45</sup> Gold, interview by author.

<sup>46</sup> Gold, interview by author.

<sup>47</sup> Bickley, interview by author.

Deep Listening certificate holder, I can speak from experience as both a student and teacher. These framings provide vital context for understanding Deep Listening as collaborative and inclusive of the more-than-human world.

### Sound and Listening Modality

The sound and listening modality of Deep Listening is most closely associated with Oliveros and draws on her experience as a composer. Often the goal in this modality is awareness of, attention to, or the making of sounds. This can be done in various combinations with the other modalities, but always with an emphasis on listening. Deep Listening approaches listening as a way of recognizing sounds and others, akin to Feld's acoustemology for cultural listening and sounding practices.

This modality enlists the balance of focal (or directed) attention and global (or broad) awareness.<sup>48</sup> Focal attention involves attending to one sound in fine detail, dwelling on its characteristics and sonic qualities. Global attention considers the entire sonic space without prioritizing any one sound over others. Deep Listening is concerned with how these sounds relate to each other, a "balancing of these two forms of attention so that one can flexibly employ both forms and recognize the difference between these two forms of listening."<sup>49</sup> Oliveros visually depicts this relationship through the image of a mandala, or a circle with a dot in the center (fig. 4). She uses the mandala as a "symbol of integration" equalizing various attention types for humans to ultimately access their

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<sup>48</sup> Oliveros developed focal and global attention through the 1970s. See Pauline Oliveros, *Software for People: Collected Writings 1963–80* (Baltimore, MD: Smith Publications, 1984).

<sup>49</sup> Oliveros, *Deep Listening: A Composer's Sound Practice*, 13. Elsewhere Oliveros refers to these ideas with different vocabulary: "Attention is narrow, pointed and selective. Awareness is broad, diffuse and inclusive." From Oliveros, *Software for People*, 139.

full potential.<sup>50</sup> Balance is crucial in the Deep Listening philosophy, and Oliveros frames music as a “dynamic process unfolding as a relationship between an individual or a group of individuals, and sound vibrations.”<sup>51</sup> As discussed, related ideas are found today in other contexts, such as the passive, directed, and active listening modes in acoustic ecology.<sup>52</sup>

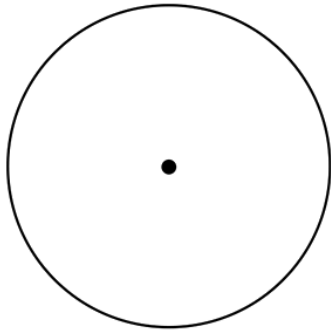


Figure 4. Mandala showing the balance of focal attention (dot) and global attention (circle) needed for Deep Listening. (Pauline Oliveros, “On Sonic Meditation,” in *Software for People: Collected Writings 1963–80* (Baltimore, MD: Smith Publications, 1984), 140.

However, focal and global attention can assume listener privilege and imply an idealized listening state that may not be possible based on neurodiversity, distractions, safety, and the like. Further, humans and nonhumans in the space may not want or intend to be listened to. There are also logistical limits to what humans can perceive. One approach Deep Listening could pull from to address restrictions is using sensitive

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<sup>50</sup> Pauline Oliveros, “All sounds are music,” interview by Zenia Cleigh, 1979, box 12, folder 10, Pauline Oliveros Papers, MSS 102, Special Collections & Archives, University of California San Diego. See also Pauline Oliveros, “Pauline Oliveros and the grand composition,” interview by Marcia Tanner, 1979, box 12, folder 15, Pauline Oliveros Papers, MSS 102, Special Collections & Archives, University of California San Diego.

<sup>51</sup> Oliveros, *Software for People*, 130.

<sup>52</sup> Garth Paine, “Acoustic Ecology 2.0,” *Contemporary Music Review* 36, no. 3 (2017): 171–181.

microphones for micro and macro listening as typically found in mastering recordings and sound art transducer designs.<sup>53</sup> Sound artist Jez riley French, for example, practices “durational listening, often at micro-levels” to hear moss, soil, and architecture.<sup>54</sup> Other ways to overcome constraints could be with the dream modality imagining beyond limitations and through play.

Playfulness is one of Oliveros’s defining traits in her sound and listening work. Growing up, she remembered her mother encouraging a spirit of play, which shaped her sense of humor.<sup>55</sup> As William Osborne notes, “One of the most unusual aspects of Deep Listening is the element of folly that is part of its practices, a form of radical playfulness that Oliveros feels is essential to fostering creative expression.”<sup>56</sup> Oliveros’s friend and colleague Hahn remembers that “Her playfulness was driven by a sense of the everyday potentials of connecting and improvising with others,”<sup>57</sup> and students recall how such

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<sup>53</sup> Russ Hepworth-Sawyer, ed., *From Demo to Delivery: The Process of Production* (Burlington, MA: Elsevier, 2009), 127; “micro-listening workshops,” Subtropics, 2025, <https://subtropics.org/micro-listening-workshops/>.

<sup>54</sup> “Home – news,” Jez riley French, 2025, <https://jezrileyfrench.co.uk/>. See also Jez riley French, “Audible Silence – A Personal. Reflection on Listening to Sounds Outside of Our Attention,” World Listening Project, June 24, 2021, <https://www.worldlisteningproject.org/audible-silence-a-personal-reflection-on-listening-to-sounds-outside-of-our-attention/>.

<sup>55</sup> Miya Masaoka. “Deep and Wide: An interview with Pauline Oliveros,” May 29, 2002, <https://miyamasaka.com/writings-by-miya-masaoka/2002/deep-and-wide-an-interview-with-pauline-oliveros/>; Jennifer Kelly, *In Her Own Words: Conversations with Composers in the United States* (Urbana, IL: University of Illinois Press, 2013), 152–153.

<sup>56</sup> William Osborne, “Sounding the Abyss of Otherness: Pauline Oliveros’ Deep Listening and the *Sonic Meditations*,” in *Women Making Art: Women in the Visual, Literary, and Performing Arts since 1960*, ed. Deborah J. Johnson and Wendy Oliver (New York, NY: Peter Lang, 2001).

<sup>57</sup> Tomie Hahn, “Sputtering Rituals: Remembering Pauline Oliveros as Improvisation-in-Action,” *Critical Studies in Improvisation* 12, no. 2 (2018): 2.

playfulness was also integral to her workshops.<sup>58</sup> Reiley identifies playfulness as a shared quality of other prominent Deep Listening figures as well.<sup>59</sup> In the sounding and listening modality, playfulness can foster a nonjudgmental freedom to explore sonic possibilities.

This modality also encourages sounding as a reply to environmental listening. For example, the piece *The Witness* (1989) “consists of three strategies for listening and responding, with guidelines for the use of the strategies.”<sup>60</sup> Written as a solo duet with an imaginary partner, duo, or ensemble, the multi-page text score begins with commentary on the importance of spatial awareness and spatial relationships for performers. Performer responses can be expressed through sound, movement, dramatic action, or any combination of the three, and these options directly represent the three Deep Listening modalities. Oliveros also addresses how to structure focus: Strategy I is attention (or listening) to oneself, Strategy II is attention to others, and Strategy III is attention all over. After progressing through each Strategy in sequence, performers may flow between them in any order.

Strategy I, attention to oneself, instructs the performer to go inward while actively trying to ignore other imaginary or real partners. While listening to themselves, participants respond with one sound, movement, or dramatic action at a time different from all others and punctuated by silence or stillness of various durations. Flutist Claire

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<sup>58</sup> Ximena Alarcón and Ron Herrema, “Pauline Oliveros: A Shared Resonance,” *Organised Sound* 22, no. 1 (2017): 8.

<sup>59</sup> Reiley, e-mail message to author.

<sup>60</sup> Pauline Oliveros, *The Witness* (Kingston, NY: Deep Listening Publications, 1989).

Chase posits that this focus on self could be uncomfortable for the performer,<sup>61</sup> and anthropologist Eduardo Kohn frames Strategy I as “a practice for interrupting settled habits [and] psychic loops.”<sup>62</sup> Calling in presumed opposites, like sound and silence, also showcases the range of possibilities present within one person. This element relies on listening to self and internal environments to inform participants of their limits and options alone before applying them with others.

Strategy II shifts the attention outward. As is common in Deep Listening scores, performers should listen before reacting. Possibilities abound for responses as performers can anticipate, match, or follow others’ past or future actions and sounds. The score specifically mentions trying to anticipate or intuit the next action, which could create a loop of unintentionally influencing what others do if the performer anticipates early enough. This contributes to Strategy II’s goal to “become like a witness to the totality of all the performance interactions as if the whole group and the environment was perceived as only one performer.”<sup>63</sup> In this, I detect ties with the earlier *Sonic Meditation* “Ear Ly” and the instruction to enhance the auditory environment seamlessly and perform by not performing.<sup>64</sup> These share the goal of environmental connection through listening, as is common in acoustic-ecology-based acoustemological practices, but different from

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<sup>61</sup> Ione and Claire Chase, “Deep Listening Futures (Beyond Colonial Mind),” talk for The Center for Deep Listening, virtual, December 16, 2023.

<sup>62</sup> Eduardo Kohn, “*The Witness Program Notes*,” accessed January 5, 2023, <https://static1.squarespace.com/static/62baf51b41e90e4d78e75d60/t/63b8e2918fc9ab56a398cd1d/1673061010082/Kohn+Witness+Programs+Notes+Dec+13%281%29.pdf>.

<sup>63</sup> Oliveros, *The Witness*.

<sup>64</sup> Pauline Oliveros, *Sonic Meditations: March–November 1971* (Baltimore, MD: Smith Publications, 1974).

Schafer's listening approach to "correct" soundscapes. Focusing completely on others may ideally help detect their limits and possibilities, similar to the self-reflection in Strategy I. By combining the knowledge gained in Strategies I and II, a performer can rely on their own strengths plus count on others to potentially address and improve weaknesses, creating a symbiotic relationship for Strategy III.

Strategy III blends listening to the self and others for "attention all over."<sup>65</sup> The participant is invited to try performing inside, with, or outside the time of others, expanding their field of sonic awareness as much as possible. Oliveros states, "Try to feel the past, present and future of the performance as unity."<sup>66</sup> The expansiveness of *The Witness* allows for many repetitions, and the piece could stand as its own continuous listening practice. As Kohn elucidates, shifting focus from the self "allow[s] other unexpected selves, human or nonhuman, to emerge" and "reveal a larger collective mind."<sup>67</sup> Participants can draw on dreams, imagination, and memory to inform Strategy III, hearkening to the dream modality of Deep Listening. Further, in line with Kohn's interpretation, multispecies beings and their sounds are valued as sources of knowledge and inspiration for coexistence.

Without breaks between Strategies, sonic awareness and listening mark the movement from one section to the next. The score explains specifically that a group consensus determines when Strategy II is established to then begin Strategy III, though the change between I and II is dependent on an individual decision to listen and react.

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<sup>65</sup> Oliveros, *The Witness*. This also reminds of Deep Listening's global attention.

<sup>66</sup> Oliveros, *The Witness*.

<sup>67</sup> Kohn, "*The Witness* Program Notes."

Moving from I to II necessitates failing at the exclusive attention required in Strategy I, but in this way Oliveros employs failure to indicate success. Throughout the piece, in fact, failure is built in to be deconditioned.<sup>68</sup> I interpret this as an element of the playfulness prevalent in Oliveros's work and the Deep Listening practice.<sup>69</sup> This allows performers to probe their limits and ranges and enter a state of playful exploration. Through the elements of play, attention, and response, *The Witness* exemplifies fundamental characteristics of the Deep Listening sounding and listening modality.

From the start of the score, Oliveros encourages expanded listening, since performing as a soloist with an imaginary partner requires a different approach than many performers are typically trained to employ, and also taps into the playful creativity of imaginary friends. Even when performing with others, this piece brings in the real and imagined presence of sentience.<sup>70</sup> For example, documentation from a performance at Widow Jane Mine in Rosendale, New York, with percussionists Susie Ibarra and Alex Peh, flutist Chase, and Senem Pirlir contributing live electronics, included the sonic presence of the more-than-human world through pattering water drops and cheeping bird calls, both emulated by the performers.<sup>71</sup> In another performance at the outdoor Deep

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<sup>68</sup> Chase said that Oliveros told them this in a rehearsal for *The Witness*. Ione and Chase, "Deep Listening Futures (Beyond Colonial Mind)."

<sup>69</sup> Oliveros wrote, "Play is improvisation and improvisation is play" in Pauline Oliveros, "Safe To Play," *Critical Studies in Improvisation* 12, no. 1 (2017). See also Pauline Oliveros, "Safe to Play," keynote address at "Just Improvisation: Enriching child protection law through musical techniques, discourses and pedagogies" Symposium, Queen's University Belfast, Ireland, May 29–30, 2015, <http://translatingimprovisation.com/portfolio/symposium>.

<sup>70</sup> Ione and Chase, "Deep Listening Futures (Beyond Colonial Mind)."

<sup>71</sup> Claire Chase, Susie Ibarra, Alex Peh, and Senem Pirlir, "Pauline Oliveros: The Witness (1989)," performed May 27, 2021, posted June 10, 2021, by Liam Nichols, YouTube, <https://youtu.be/g45pGO9oyxo?si=iwNEaR8MLEZ6MQsN>. Ibarra, Peh, and Chase also perform together as the Talking Gong trio.

Listening Plaza in Kingston, New York, Ibarra, Peh, Chase, and Pirlner together with JL Simonson, Peter Wetzler, and Norman Lowrey joined rumbling road traffic and chirping bird calls when making sounds.<sup>72</sup> The score encourages such sonic awareness, especially in Strategies II and III where listening to environmental sound is key.

The end of the piece is marked by stillness and/or silence by the performers, which could call attention to any inner or external environmental sounds that do not cease, prompting the continuation of listening outside the performance context. This culmination positions the individual performer as part of the whole, showcasing interconnectedness through sound, movement, or dramatic action. Care, defined as “humble inquiry, inclusive connection, and responsive action,”<sup>73</sup> is implied in the piece through the guidance in each Strategy to listen (inquire) and then respond (action) as part of the whole (connection).

Naturally, limitations exist. Many human and more-than-human sounds are what Sabine Feisst designates as “hidden acoustic ecologies” outside the ranges of human hearing; additionally, human hearing ranges change for many reasons (age, illness, attention, environment, etc.), and this impacts what participants can sonically absorb.<sup>74</sup> In some cases, hearing loss can be mitigated by drawing on memory, imagination, and dreams, a key part of the score and a larger Deep Listening experience. Multi-sensory listening through seeing, feeling, and smelling are other ways to expand attention and

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<sup>72</sup> “The Witness by Pauline Oliveros,” performed July 23, 2021, posted September 20, 2023, by Norman Lowrey, Vimeo, <https://vimeo.com/866546896>.

<sup>73</sup> Flower and Hamington, “Care Ethics, Bruno Latour, and the Anthropocene,” 31.

<sup>74</sup> Sabine Feisst, “Sustaining Sonic Futures through Understanding Hidden Acoustic Ecologies,” in *Soundstainability: Making Future From Listening*, ed. Emiliano Battistini and Francesco Michi (Giulianova, ITA: Galaad Edizioni, 2025).

come to terms with sounds outside human hearing ranges, as Feisst, Monica Gagliano, and Robin Kimmerer suggest, discussed in earlier chapters.<sup>75</sup> And while *The Witness* does not explicitly call for the use of hearing-assistive technology, Oliveros embraced innovative technologies to accommodate diverse musicians and likely would have supported such adaptations.

Expanding listening and awareness to more voices in this piece “opens the possibility of nondominating, nonhierarchical modes of interaction,” to borrow Merchant’s words.<sup>76</sup> This pertains to practices in traditional knowledge of recognizing other entities as “people,” challenging anthropomorphic views and instead equalizing power and positions.<sup>77</sup> In *The Witness*, the continual return to new listening methods fosters such engagement and interspecies interaction, countering domination. By striving for togetherness, as in Strategy III, participants may increase the agency of beings in a space, reevaluate power dynamics, and reorient their relationships primarily through interaction with sound. Further, the flexibility of time and potential lack of entrainment in the piece could move participants out of traditional rhythmic-metric structures and

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<sup>75</sup> Monica Gagliano, Marcelo Gleiser, and Richard Powers, “Plant Intelligence,” talk, February 27, 2020, posted March 5, 2020, by Institute for Cross-Disciplinary Engagement at Dartmouth, YouTube, <https://www.youtube.com/watch?v=3-2A8EOHo08>; Robin Wall Kimmerer, *Braiding Sweetgrass: Indigenous Wisdom, Scientific Knowledge and the Teachings of Plants* (Minneapolis, MN: Milkweed Editions, 2013); Warren Cariou, “Sweetgrass Stories: Listening for Animate Land,” *Cambridge Journal of Postcolonial Literary Inquiry* 5, no. 3 (2018): 338–352.

<sup>76</sup> Merchant, *Reinventing Eden*, 196.

<sup>77</sup> Dan Shilling, “Introduction: The Soul of Sustainability,” in *Traditional Ecological Knowledge Learning from Indigenous Practices for Environmental Sustainability*, ed. Melissa K. Nelson and Dan Shilling (Cambridge, ENG: Cambridge University Press, 2018), 12.

toward more-than-human rhythms. Sharing space, presence, and especially time with others while improvising can work towards “real-time empathy.”<sup>78</sup>

In *The Witness* and the larger Deep Listening practice, Oliveros used the sounding and listening modality to encourage participants “to hear the relationality of sound sounding in space, through bodies and between bodies” and understand sound as “an entity that links listening ... beings.”<sup>79</sup> Recognizing voices of the more-than-human world can allow for different, historically silenced, or ignored perspectives to be heard.<sup>80</sup> As Oliveros stated, “being heard is a step toward being understood. Being understood is a step toward being healed.”<sup>81</sup>

### Dream Modality

The dream modality remains closely associated with writer, artist, and healer Ione (born Carole Ione Lewis in 1937), whom Oliveros met in 1985. Oliveros and Ione worked on other projects together as well, such as the theater pieces *Njinga the Queen King* (1993) and *The Nubian Word for Flowers* (2017), and text by Ione with environmental imagery appears in “Approaches and Departures,” the fourth movement of Oliveros’s *Four Meditations for Orchestra* (1996). It is worth noting that Oliveros was exploring dreams before meeting Ione, evidenced by her interest in Carl Jung as

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<sup>78</sup> David Borgo, “Strange Loops of Attention, Awareness, Action, and Affect in Musical Improvisation,” in *Music and Consciousness 2: Worlds, Practices, Modalities*, ed. Ruth Herbert, David Clarke, and Eric Clarke (New York, NY: Oxford University Press, 2019).

<sup>79</sup> Louise Marshall, “Deep Listening: The Strategic Practice of Female Experimental Composers post 1945” (PhD thesis, University of the Arts London, 2018), 224, ProQuest (13873773).

<sup>80</sup> Amanda Weidman, “Voice,” in *Keywords in Sound*, ed. David Novak and Matt Sakakeeny (Durham, NC: Duke University Press, 2015), 232; Merchant, *Reinventing Eden*, 201.

<sup>81</sup> Oliveros, “My American Music,” 393.

discussed previously and by her instructing students to keep a dream journal in the 1970s,<sup>82</sup> but Ione’s contributions for dreams in Deep Listening contexts are significant.

Ione cites training in psychotherapy, Qi healing, and Tibetan Buddhism. She also has strong connections with her past, family, and ancestry through dreams. In an interview with Shanna Smith, Ione recounted,

Dreams have always been an important part of my existence, paying attention to them, and enjoying them, and receiving them, and teaching about them. And creating what I call dream community. [...] And they are the closest way that we can communicate with the beyond. What we call the beyond are people who have passed on. [...] So there is a way for the dreams to help us connect to the ancestors.<sup>83</sup>

Ione also speaks of accessing “timeless realms” through dreams.<sup>84</sup> In some theories, dreams are understood to combine past memories with present worries and future concerns, supporting the idea in Deep Listening that listening can fuse timelines.<sup>85</sup> This reminds of Ferrari’s evocation of sonic memory in *Presque rien No. 1* (1970), movement between real and dream spaces in Westerkamp’s *Kits Beach Soundwalk* (1989), and recalled soundmarks in Truax’s *Pacific Fanfare* (1996), as discussed in Chapter 2. Teachers have noticed that “since Pauline’s passing[,] an openness towards

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<sup>82</sup> Paul Drescher, “Magical Yet Practical—Remembering Pauline Oliveros (1932–2016),” *New Music USA*, December 12, 2016, <https://newmusicusa.org/nmbx/magical-yet-practical-remembering-pauline-oliveros-1932-2016>. Ione confirmed this, saying she was exploring dreams on the East coast while Oliveros was similarly interested in dreams on the West coast in the 70s before they met; discussed by Bhattacharya, Dempster, Gold, Ione, and Weintraub Q&A following Texas premiere of *Deep Listening: The Story of Pauline Oliveros*; also discussed in “Deep Listening and Radical Ecology,” posted November 1, 2024, by Radical Ecology, Vimeo, <https://vimeo.com/1025494890>.

<sup>83</sup> Shanna Louise Smith, “‘Tell Me My Diamonds’: Story Bearing in African American Women’s Life History Narratives” (PhD diss., University of Maryland, College Park, 2014), 62, ProQuest (3627677). See also “Deep Listening and Radical Ecology,” Vimeo.

<sup>84</sup> Carole Ione, *Listening in Dreams* (New York, NY: iUniverse, Inc., 2005), 57.

<sup>85</sup> Jennifer Michelle Windt, *Dreaming: A Conceptual Framework for Philosophy of Mind and Empirical Research* (Cambridge, MA: MIT Press, 2015), 614.

multidimensional listening to the ancestors” has grown in the Deep Listening community.<sup>86</sup> I interpret the inclusion of ancestors as an added aspect of the more-than-human world, also important for certain Indigenous definitions of deep listening as discussed in Chapter 3 and for Kite’s work to be covered in Chapter 5.

In many Indigenous cultures, dreams are used for knowledge sharing, storytelling, advice, teaching, and guidance “as a way of understanding ourselves.”<sup>87</sup> Additionally, The Dreaming, which is foundational to Aboriginal culture and beliefs, encompasses more than sleeping dreams, and “Dreaming Narratives also have encoded in them important information regarding local micro-environments, including local flora, fauna and the location of water, deep knowledge of ‘country’, and survival in specific locations.”<sup>88</sup> According to Ione, dreams facilitate connection and knowing with self and others if participants are open to the experience. She identifies herself as a Dream Keeper (or facilitator) with the objective of holding space, and she also hosts annual dream festivals through the Ministry of Maåt. She recognizes dream practices across cultures, including non-Western examples by ancient Egyptians, Iroquois, Senoi, Maasai, and Fellahin.<sup>89</sup> Despite the prevalence of dreams in various cultures and Deep Listening, Ione

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<sup>86</sup> Reiley, e-mail message to author.

<sup>87</sup> John T. Ward, “Indigenous Resilience and Healing Through Dreams and Spirituality,” *Dreaming* 34, no. 3 (2024): 259–260.

<sup>88</sup> Christine Judith Nicholls, “‘Dreamtime’ and ‘The Dreaming’: who dreamed up these terms?,” *The Conversation*, January 28, 2014, <https://theconversation.com/dreamtime-and-the-dreaming-who-dreamed-up-these-terms-20835>.

<sup>89</sup> Ione, *Listening in Dreams*, 80–85.

noticed that “dreams get marginalized in the Deep Listening practice” and she has had to advocate for their incorporation.<sup>90</sup>

In the initial three-month Deep Listening intensive I completed in 2019, the dream modality was taught second, though all modalities appeared throughout. The facilitators first introduced listening to a sound from dreams, and the opening assignment strove to connect us with the dreaming we had done all our lives; relying on familiarity helped ease into a potentially new concept. During the training, each participant kept a dream journal recording memories of dream fragments, narratives, feelings, etc. to track recurring themes (if applicable), grow awareness of sounds in dreams, and share as appropriate for various scores done together. Through the journaling process, dreamers may consider the feelings, themes, questions, associations, and elements of play present in their dreams.<sup>91</sup> Dream reflections could then be conveyed as prose, sounds, images, movement, or videos. During my intensive, we also endeavored to dream together on predetermined nights (despite being in different time zones) and maintained a collaborative document for dream experiences from the group.

At Deep Listening events, practitioners are guided to reflect on sleeping dreams and the sounds within them, later pulling from these memories when performing Deep Listening scores. Studies show that sounds are present in over fifty percent of recalled dreams,<sup>92</sup> with the majority of those sounds being speech-based.<sup>93</sup> Participants may also

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<sup>90</sup> “Deep Listening and Radical Ecology,” posted November 1, 2024, by Radical Ecology, Vimeo, <https://vimeo.com/1025494890>.

<sup>91</sup> Ione, *Listening in Dreams*, 115–116.

<sup>92</sup> Antonio L. Zadra, Tore A. Nielsen, and D. C. Donderi, “Prevalence of Auditory, Olfactory, and Gustatory Experiences in Home Dreams,” *Perceptual and Motor Skills* 87, no. 3 (1998): 819–826; Ricardo Velluti, *The Auditory System in Sleep* (Burlington, MA: Elsevier, 2018).

notice the function of listening in their dreams.<sup>94</sup> Those who do not feel they dream or have ever dreamt are encouraged to focus on dream fragments (rather than expecting a dream narrative) or to engage in an imaginative exercise; dreaming is understood to encompass daydreaming, imagination, and visions in addition to dreams from the sleeping state. This is supported by oneirology research showing that the same brain network supports both imaginative thought and dreaming.<sup>95</sup> Powerfully, this broadened understanding of dreaming allows for multiple and simultaneous realities in Deep Listening exercises. Dreaming is also a way to creatively experience others' views and feelings, which can tie to empathy.<sup>96</sup> Collective dreaming can be part of Deep Listening events where a group sets an intention to dream together at a certain time and later reflect on the experience. Regularly telling others about our dreams is how dream community is built, and Ione has found that partners or friends who are "intensely communing with each other" may more often experience parts or all of the same dream.<sup>97</sup>

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<sup>93</sup> Roar Fosse and Frank Larøi, "Quantifying Auditory Impressions in Dreams in Order to Assess the Relevance of Dreaming as a Model for Psychosis," *PLOS ONE* 15, no. 3 (March 2020).

<sup>94</sup> Ione, *Listening in Dreams*, 113.

<sup>95</sup> Alie Ward, host, *Ologies*, podcast, episode 300, "Oneirology (DREAMS) with Dr. G. William Domhoff," January 3, 2023, <https://static1.squarespace.com/static/5998d8226f4ca3396027aae2/t/6400cdbadeeb014309b32d4e/1677774267088/Ologies+-+Oneirology+Part+1.pdf>. Other dream studies, however, differentiate between sleeping dreams and daydreams according to the dreamer's positionality. Jennifer Michelle Windt writes, "In one study, nearly half of participants experienced their daydreams from a third-person rather than from a first-person perspective (Christian et al., 2013). By contrast, passive observation is much less frequent, as we have seen, in dreams." From Windt, *Dreaming*, 615.

<sup>96</sup> Eric Clarke, "Empathy and the Ecology of Musical Consciousness," in *Music and Consciousness 2: Worlds, Practices, Modalities*, ed. Ruth Herbert, David Clarke, and Eric Clarke (New York, NY: Oxford University Press, 2019).

<sup>97</sup> Ione, *Listening in Dreams*, 65, 114.

I was taught by Ione that dreams are a means of addressing imbalances, whether within cultures or ourselves. This is an important framework for understanding the Chapter 5 case studies and the artists' applications of dreams. By keeping a dream journal and increasing attention to both waking and sleeping dreams, humans can come to know their own important symbols and stories, and in doing so return power to their lives.

Bickley's comments about community express this:

I think it's a really loving, compassionate matrix of community empowerment, of helping people discover their own agency, and then how much that enables a community to have agency. ... And as a result, because communities are made up of individuals, I think it yields a healthier community. To me that's just such a joy in our intensive class sessions is just seeing the community building that happens and the connections that we experience there.<sup>98</sup>

An essential aspect necessary for this and in the dream modality is "lift off judgment," or LOJ. This began when Ione noticed participants would criticize their dreams or be fearful to share them with others, and she instead encouraged a more open approach. The LOJ concept now applies to Deep Listening as a whole and is intended to promote acceptance both of one's own creative output and of what others choose to put forth, sonically or otherwise. LOJ allows for observing sounds, dreams, and movement without assigning value to them. However, participants should still exercise critical thinking and accountability when analyzing their listener positionality, and self-reflection as in group discussions and through personal journaling can help with this.

The openness of LOJ can also advance a connection between humans and the more-than-human world, establishing an environmental thread in the dream modality. In her book *Listening in Dreams* (2005), Ione quotes ecofeminist Carolyn Merchant when

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<sup>98</sup> Bickley, interview by author.

discussing the negative impacts of certain worldviews on nature, women, and – as Ione adds – dreams, reflecting the influence of environmentalist and ecofeminist thought for the Deep Listening practice.<sup>99</sup> Ione also references Jungian dream techniques in a noteworthy way: “Jung perceived the dream as an environment, an actual place where we find ourselves and where events occur.”<sup>100</sup> Such environments hold potential for exploring personal identities. Observing how bodies and characters move within dreams is another approach, as is responding to dreams with dancing, gestures, or other movement.<sup>101</sup> Ione also senses a connection between dreams and physical spaces, asserting that “Sleeping at Sacred Sites has been an important tradition of the peoples of many lands ... who were particularly in tune with places of power and the ley lines of the earth that connect them.”<sup>102</sup> As such, there is an embodied element to dreaming, not only in the dream itself, but in the body experiencing the dream.

The focus on the relationships between environments, sonic awareness, and dreams is found throughout the Deep Listening practice. For example, in the meditation “Dreaming the Sounds of the Universe” (2005), Ione prompts participants to

Listen in your waking and sleeping dreams for the sounds of the universe. Perhaps they can be heard in the spaces between sounds. Perhaps we are hearing these sounds all the time without knowing, without recognizing them.<sup>103</sup>

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<sup>99</sup> Ione, *Listening in Dreams*, 67.

<sup>100</sup> Ione, *Listening in Dreams*, 59. An analytical psychologist, Jung was interested in exploration of the whole self and also wrote about archetypes and the interpretation of dreams related to individual and collective consciousness. See Carl Gustav Jung, *Dreams*, 2nd ed., trans. R.F.C. Hull (New York, NY: Routledge, 2014). Oliveros was also influenced by Jung’s ideas.

<sup>101</sup> Ione, *Listening in Dreams*, 113.

<sup>102</sup> Ione, *Listening in Dreams*, 84.

<sup>103</sup> Ione, *Listening in Dreams*, 54.

The phrase “in your waking and sleeping dreams” covers a wide breadth of dreaming experiences and parallels Oliveros’s explanation of Deep Listening as listening to everything all the time. It also serves to succinctly explain the dreaming modality as including both wakefulness and sleep. The scope of the exercise continues to expand with the next phrase to listen “for the sounds of the universe.” This inclusive range engages imagination plus environmental awareness and recall of past experiences. Starting the next two sentences with “perhaps” opens the listening dreamer to encourage possibilities, and the phrase “in the spaces between sounds” may draw attention to inaudible and silenced beings. This points to the implication in Deep Listening “that there is always more to hear, that the unheard is an inherent part of listening.”<sup>104</sup> In this exercise, dreams provide a method to more openly accept these “spaces between sounds.”

In the final sentence, hearing “all the time, without knowing” brings to mind Oliveros’s realization that the tape recorder in her San Francisco apartment captured sounds she hadn’t heard, an impetus for the Deep Listening practice. In this way, the last line calls back to the beginning instruction to listen and to the larger Deep Listening practice, creating a circular and continuous prompt hinged on the action of listening. The first word “listen” is in present tense and also the only mention of listening. Stating it first and calling back to it at the end of the score makes it impactful and the focus of the exercise within the dream context.

Some people may have negative experiences or associations with sleeping dreams due to trauma, nightmares, sleep disturbances, or other conditions. The option to instead

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<sup>104</sup> Maud Jacquin and Elsa Polverel, “‘Dissolving your Ear Plugs’: The Unheard in Pauline Oliveros’ Deep Listening Practice,” *kunsttexte.de* 1 (2020), 2.

daydream can help address this, yet some may still feel uncomfortable engaging in the dream modality of Deep Listening. Further, an individual's specific philosophies and beliefs about dreaming may impact how they choose to approach this aspect of the practice. Deep Listening teachers recognize that dreaming may be the most difficult modality to work through and teach, so Ione suggests connecting the dream of the reality and the reality of the dream.<sup>105</sup> She also encourages talking about dream experiences in the present tense.<sup>106</sup> Different from Oliveros's 1970s work with dreams, dream interpretation is not the goal; rather, participants are urged to focus on dream sounds and patterns and to consider the truths expressed in dreams and the feelings of dreams. This corresponds with Salomé Voegelin's concept of sonic possible worlds as "an alternative point of view, or alternative points of view, on what the world is, and how we live in it, showing us what else it could be and how else we could inhabit it."<sup>107</sup> Such a perspective gives participants power to define and determine their experiences. Ione finds that working with dreams "begins to open to a fuller way of *being* in the world."<sup>108</sup>

### Movement Modality

Just as Ione's influence on the dream modality is paramount, the same is true for dancer Heloise Gold's impact on Oliveros's existing interest in kinetic awareness for the movement modality of Deep Listening. Gold (b. 1951) facilitates this modality to reflect on how sounds and bodies relate to each other. She is trained in ballet, contemporary and

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<sup>105</sup> Ione, *Listening in Dreams*, 8. Ione's *Listening in Dreams* consists of two collections of writings with many artist contributions (including by Oliveros) containing examples and exercises of dreaming inspired by and used in the Deep Listening practice.

<sup>106</sup> Ione also practices this by continuing to talk about Oliveros in the present tense.

<sup>107</sup> Voegelin, *Sonic Possible Worlds*, 22.

<sup>108</sup> Ione, *Listening in Dreams*, 66.

avant-garde dance, and clowning. Gold teaches Yang-style Tai Chi, which is part of Deep Listening warmups and reflects the impact of Asian philosophies and practices on Deep Listening. Collaboration with other artists across disciplines is common for Gold, as is a connection with other species, especially birds. For example, the impetus for her *Bird Dream Dances and Songs* (1982 to present) arrived to Gold in a dream when “a big voice” instructed her to create “bird dances and songs.”<sup>109</sup> Though the piece is human-centric, Gold strives to respectfully observe birds and understand their rhythms and qualities rather than simply copying their movements and sounds out of context.<sup>110</sup>

Embodied experiences are integral to Gold’s works. About listening with the body, Gold says,

What I began to experience and articulate is a sense that we have ears sending and receiving signals all over and through the body. Every cell, every bone, every organ is alive and listening. And as a result of that practice, we can feel ourselves more easily, sense more profoundly, and respond more sensitively and immediately.<sup>111</sup>

This “listening body” resonates with Oliveros’s well-known sonic meditation “Native,” which states: “Take a walk at night. Walk so silently that the bottoms of your feet become ears.”<sup>112</sup> Gold and Oliveros consistently engage the entire human body as a listener and as a way to sense and connect to surroundings, similar to the practice of

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<sup>109</sup> “Taking Flight – Gold’s Ode to Winged Creatures Inspired by Dream,” *Austin American Statesman*, March 16, 1995, 64.

<sup>110</sup> “Taking Flight,” *Austin American Statesman*.

<sup>111</sup> Heloise Gold, “Deep Listening through Movement: A Personal History,” in *Anthology of Essays on Deep Listening*, ed. Monique Buzzarté and Tom Bickley (Kingston, NY: Deep Listening Publications, 2012), 150.

<sup>112</sup> Pauline Oliveros, “V. Native,” in *Sonic Meditations: March–November 1971* (Baltimore, MD: Smith Publications, 1974).

soundwalking. Gold’s “listening body” also informs my interpretation of Jean-Luc Nancy’s phrase *être à l’écoute* (“to be all ears”), as discussed in Chapter 1. In some of Gold’s exercises, participants are guided to listen with either their full body or specific parts, reflective of her own experience of learning to listen through her bones and skin by lying on boulders.<sup>113</sup> For instance, in Gold’s book *Deeply Listening Body* (2018), the movement pieces “Tree in Wind,” “Still Moving,” “Movement of the Moment,” and “Sound/Body” all specifically mention and facilitate listening.<sup>114</sup>

Gold created the movement modality content for Deep Listening intensives. In my training, moving was covered in the third and final month, though we did movement exercises from the start. During the sessions, which took place via Zoom, movement instructions were typically read aloud, and then we could move away from our cameras or out of frame to perform them. One common movement exercise was blopping, also called shaking. Gold includes this in *Deeply Listening Body*, describing it as a traditional practice she learned from Tai Chi and qigong teachers but with her own added nuance in interpretation.<sup>115</sup> Blopping is done while standing by quickly and repeatedly bending and straightening the knees, letting the body release tension. Importantly, Gold’s instructions note that sound may be added. In the intensives and in my own practice, I found that starting a session with blopping effectively prepared me for increased sonic and body awareness.

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<sup>113</sup> Also discussed by Bhattacharya, Dempster, Gold, Ione, and Weintraub Q&A following Texas premiere of *Deep Listening: The Story of Pauline Oliveros*.

<sup>114</sup> Heloise Gold, *Deeply Listening Body* (Kingston, NY: Deep Listening Publications, 2018), 62–69.

<sup>115</sup> Gold, *Deeply Listening Body*, 2, 31.

Outside of the intensive class sessions, we were expected to do a daily intuitive “one-minute dance” following body impulses, along with regular Tai Chi, qigong, or movement improvisations from *Deeply Listening Body*, to be done outdoors when possible. As with the dream modality, each participant kept a journal detailing feelings, thoughts, and reactions throughout the modality experience. Recurring themes during the movement month included awareness of energy flow and cultivating creativity, specifically from listening through the body.

Many exercises in the movement modality do require a certain level of mobility that may exclude individuals who are mobility-impaired. Unfortunately, such an implied universal body concept (which also underpins soundwalking) neglects those with various physical limitations. Additionally, participants with sensory issues, chronic illnesses, or pain may not want to listen to or with their bodies. In these cases, it is helpful for guides to offer exercises for adaptation or substitution.

An inclusive example is Gold’s piece “Sound/Body,” which grew from the early Deep Listening retreats at Rose Mountain. In it, Gold invites participants to observe and respond to the sounds in and around them, beginning in a similar fashion as the dadirri exercise discussed in Chapter 3. Gold’s instructions are as follows:

Begin in any position: lying, standing, sitting, reclining or any other position.

Start in stillness, listening. Then let your body move in response to or along with the sounds in the environment (inner and outer). You can respond to individual sounds passing through or to the whole soundscape at once. You can play back and forth between the two.

Allow the dance to ebb and flow between stillness/listening and movement/merging with sound.

Note: You may end up moving to the sound of someone else’s movement.<sup>116</sup>

Gold starts the meditation by inviting participants to adopt a still posture, listing different options to accommodate preferences and abilities. The second paragraph frames listening as necessary for the movement to come. For Gold, this skill grew on retreats as she became more sensitized to how sounds and vibrations of the surrounding environments influenced her movement and landed in her body.<sup>117</sup> While not all Deep Listening scores account for different mobility levels, “Sound/Body” does through open-ended instructions like “let your body move.” Participants are then encouraged to move “in response or along with” a range of sounds, exploring adaptability. The phrase “along with” especially amplifies a partnership ethic characteristic in that participants are ideally not trying to control environments or the more-than-human world, but are a part of them.<sup>118</sup>

Gold pairs listening with stillness and sound with movement; this prompts the participant to observe inner and outer environments before intentionally acting on and with the space. The final note “You may end up moving to the sound of someone else’s movement” brings out an interconnectedness between different listening and moving bodies, encouraging a continuous renewal and interchange of actions, similar to the circular set up by Ione in “Dreaming the Sounds of the Universe.” Gold herself recognizes the seemingly endless possibilities of this piece.<sup>119</sup>

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<sup>116</sup> Gold, *Deeply Listening Body*, 69.

<sup>117</sup> Gold, interview by author.

<sup>118</sup> Carolyn Merchant, *Reinventing Eden: The Fate of Nature in Western Culture*, 2nd ed. (New York, NY: Routledge, 2013), 193.

<sup>119</sup> Gold, interview by author.

The score also highlights the multi-sensory aspect of Deep Listening. Such embodied listening allows sound to be “experienced via multiple sensory modes—it can be seen, heard, and felt.”<sup>120</sup> Particularly, “[t]he history of deaf communication makes clear that sound is always already multimodal,”<sup>121</sup> and MRIs have shown that the hearing part of the brain, which is used for auditory processing in hearing individuals, responds to touch and vision stimuli in D/deaf individuals.<sup>122</sup> Moreover, research reveals that simply imagining an action partially activates the same neural processes as if physically performing that action.<sup>123</sup> Imagining (or dreaming) movement in response to sound, as “Sound/Body” instructs, still engages our bodies. This is significant because humans can, to a limited extent, use imaginative listening to map more-than-human experiences onto their bodies. The imagined and actual sounds and movements experienced in “Sound/Body” can remain in our bodily memory to be recalled for future meditations or interactions with environments.<sup>124</sup> And while the score does not direct participants to make sounds, Gold said that repeated iterations could add intentional sounding as a response.<sup>125</sup> In these ways, Deep Listening provides a way to realize Merchant’s call for

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<sup>120</sup> Steph Ceraso, “(Re)Educating the Senses: Multimodal Listening, Bodily Learning, and the Composition of Sonic Experiences,” *College English* 77, no. 2 (November 2014): 104.

<sup>121</sup> Mara Mills, “Deafness,” in *Keywords in Sound*, ed. David Novak and Matt Sakakeeny (Durham, NC: Duke University Press, 2015), 52.

<sup>122</sup> Benjamin Simpson, “Music for People of the Eye,” *Deaf Topics: Music and the Deaf*, July 12, 2013, <https://www.lifeprint.com/asl101/topics/music-and-the-deaf-3.htm>.

<sup>123</sup> Richard Ashley and Renee Timmers, eds., *The Routledge Companion to Music Cognition* (New York, NY: Routledge, 2017), 25.

<sup>124</sup> Garth Paine, “Ecologies of Listening and Presence: Perspectives from a Practitioner,” *Contemporary Music Review* 35, no. 3 (2016): 363.

<sup>125</sup> Gold, interview by author.

“[n]ew kinds of stories, new ways of thinking, and new ethics” through an embodied experience of sound.<sup>126</sup>

### **Other Endeavors in Deep Listening**

Oliveros set up Deep Listening as an evolving and collaborative endeavor, and it continues to this day. In 1985, she founded the Pauline Oliveros Foundation, for which Ione was co-artistic director and later artistic director, with the goal of cultivating community.<sup>127</sup> In 1990, Oliveros established the Deep Listening Catalog as a publishing enterprise responsible for printing writings, scores, anthologies, and more. In 2005, the Pauline Oliveros Foundation became the Deep Listening Institute. Between 2012 and 2014, the Institute was replaced by the Center for Deep Listening (CDL) at Rensselaer Polytechnic Institute (RPI) where Oliveros became a professor in 2001.<sup>128</sup>

Today, Rensselaer houses the Center for Deep Listening (CDL) for which ethnomusicologist, performer, and dancer Tomie Hahn was the founding director and sound and media artist Stephanie Loveless is the current director.<sup>129</sup> Hahn recalls her own history with Oliveros and Deep Listening:

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<sup>126</sup> Merchant, *Reinventing Eden*, 3.

<sup>127</sup> Pauline Oliveros, “Cues,” *The Musical Quarterly* 77, no. 3 (Fall 1993): 378.

<sup>128</sup> Thank you to Stephanie Loveless for clarifying this timeline. Stephanie Loveless, e-mail message to author, July 2, 2025.

<sup>129</sup> Both Hahn and Loveless have presented on Deep Listening and related subjects. See Tomie Hahn, *Sensational Knowledge: Embodying Culture through Japanese Dance* (Middletown, CT: Wesleyan University Press, 2007); Tomie Hahn, “Sputtering Rituals: Remembering Pauline Oliveros as Improvisation-in-Action,” *Critical Studies in Improvisation* 12, no. 2 (2018): 1–3; Tomie Hahn, *Arousing Sense: Recipes for Workshopping Sensory Experience* (Urbana, IL: University of Illinois Press, 2021); Stephanie Loveless, “Tactical Soundwalking in the City: A Feminist Turn from Eye to Ear,” *Leonardo Music Journal* 30 (2020): 99–103; Stephanie Loveless, “Deep Listening Across Distance,” talk, streamed live January 13, 2021, posted July 16, 2021, by Sound Studies Institute, University of Alberta, YouTube,

Deep Listening became most present in my life in 2002 when I started teaching at Rensselaer and met Pauline. We quickly became close and began to improvise and collaborate. Early on I sat in on her Deep Listening classes at RPI, then took the online certification.<sup>130</sup>

About the early days of the Center for Deep Listening specifically, Hahn recollects,

I established a board. I offered faculty (in the Arts Dept. as well as across campus) and other centers on campus opportunities to have DL [Deep Listening] sessions in their courses, if it seemed appropriate for the course. After that, some faculty agreed to cross-list their classes as DL courses (under PO [Pauline Oliveros's] and my guidance).<sup>131</sup>

These efforts laid the successful groundwork for Deep Listening at RPI, and the interdisciplinary initiatives reflect the broad pedagogical aspects of the practice.

The Center for Deep Listening furthers the circulation of Deep Listening ideas and practices by housing archives, sponsoring workshops, connecting practitioners, and offering Deep Listening intensive and certification programs across the globe.<sup>132</sup> The Director position is currently supported by the teaching facilitators and an advisory board.<sup>133</sup> Legal association with an organization rather than an individual speaks to the heart of Deep Listening as inclusive, and to the desire for Deep Listening to continue its efforts.<sup>134</sup> Deep Listening teachers continue facilitating and cultivating the practice in

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<https://www.youtube.com/watch?v=0T4N0ffDEUs>; Stephanie Loveless and Freya Zinovieff, "Situated Listening: Partial Perspectives and Critical Listening Positionality," *Acoustic Ecology Review* 1, no. 1 (2023); Stephanie Loveless, ed., *A Year of Deep Listening: 365 Text Scores for Pauline Oliveros* (Newark, NJ: Terra Nova Press, 2025).

<sup>130</sup> Tomie Hahn, e-mail message to author, May 5, 2025.

<sup>131</sup> Hahn, e-mail message to author.

<sup>132</sup> "About Us," The Center for Deep Listening, 2025, <https://www.deeplistinging.rpi.edu/about-us/>.

<sup>133</sup> Stephanie Loveless, interview by author, June 27, 2025.

<sup>134</sup> Louise Marshall asserts, "Archiving and documenting was, for Oliveros, a crucial practice; it is a discipline that leaves an evidential trail to women's work that has been accomplished and it is a tactic that

physical and digital spaces. For example, Loveless and Bickley are active in Deep Listening social media groups, Björn Eriksson holds immersions in Sweden, and Reiley hosts Sound Sangha, regular online meetings for listening and meditation. Additionally, Deep Listening teacher Leila Pertl and certificate holder Brian Pertl support Deep Listening efforts at Lawrence University, the first Center for Deep Listening affiliate campus. This partnership allows students and faculty across departments to practice “skills that improve the breadth and depth of one’s listening,” and the Center for Deep Listening also provides internships for Lawrence University students with work in a Deep Listening course, the Center’s archives, and other schools.<sup>135</sup>

The Center for Deep Listening offers virtual online courses for Deep Listening. The introductory class is a two-week experiential exploration of the practice through the modalities of sounding, dreaming, and moving.<sup>136</sup> The Center also offers two longer intensives, and participants may earn a certificate in Deep Listening upon completing both. The certification program was started at Deep Listening retreats and moved online after 2014. This shift did change both the retreat and sonic experience, but the telematic element expands connections across larger distances and allows participants to hear other environments. A fee for each course may limit access – a continuing barrier recognized

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will, eventually, evidentially, reverse the way that women have been marginalised.” Marshall, “Deep Listening,” 65.

<sup>135</sup> “Partners,” The Center for Deep Listening, 2024, <https://www.deeplistinging.rpi.edu/programs/partners/>; Ed Berthiaume, “Lawrence University Named First Deep Listening Affiliate Campus,” Lawrence University News, March 22, 2019, <https://blogs.lawrence.edu/news/2019/03/lawrence-university-named-first-deep-listening-affiliate-campus.html>.

<sup>136</sup> “Introduction to Deep Listening,” The Center for Deep Listening, 2025, <https://www.deeplistinging.rpi.edu/training/intro-to-deep-listening>.

by teachers<sup>137</sup> – but scholarships are offered for those in underrepresented communities, including “Black, Brown, Indigenous, and trans folks, as well as disabled and neurodiverse individuals” and those facing financial difficulty.<sup>138</sup> This speaks to Bickley’s questions at “an edge of practice for us. How do we really open structures? How do we model? How do we bring in colleagues who will be more manifesting the rainbow of humanity that is reality?”<sup>139</sup> Loveless describes the spread of the practice as organic, explaining,

the number of students attending the CDL has tripled in the last five years, but this hasn’t been the result of any conscious outreach on our part, but rather of a kind of thirst, or need, for the practice. Within this, I have focused primarily on removing barriers to access (such as with the Equity Scholarship program we initiated in 2020), and continuing to be attentive to needed shifts within the curriculum given global polycrises and participants who come from increasingly diverse backgrounds and parts of the world.<sup>140</sup>

To this end, Eriksson has noticed an increase in the number of applicants and has seen that “Deep Listening is getting more and more notice in different communities and is very much referred to as something positive.”<sup>141</sup>

The first intensive class is three months focused on the principles and philosophy of Deep Listening, and the second intensive is another three months concentrated on pedagogy.<sup>142</sup> As Bickley illuminates, “Deep Listening training, I think, can be quite

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<sup>137</sup> Björn Eriksson, e-mail message to author, May 19, 2025.

<sup>138</sup> “Equity Scholarships,” The Center for Deep Listening, 2025, <https://www.deeplisting.rpi.edu/scholarship-program/>.

<sup>139</sup> Bickley, interview by author.

<sup>140</sup> Loveless, interview by author.

<sup>141</sup> Eriksson, e-mail message to author.

<sup>142</sup> “Deep Listening Online Intensives I & II,” The Center for Deep Listening, 2025, <https://www.deeplisting.rpi.edu/training/online-intensives>.

rigorous, you know. I hope it's very gentle and very encouraging and welcoming. But it's ... detailed work. It's not just sitting and ... zoning out. It really is attending."<sup>143</sup> Within this, Loveless notes that

the facilitators work to create spaces where students can move and feel and listen their way into their own responses to the materials. It can take some time for students who are used to traditional academic environments and modes of academic performance to soften into and with the practice.<sup>144</sup>

Both intensives comprise of weekly readings, exercises, journaling, responses, and assignments. My second intensive culminated with the creation and performance of a sonic meditation by each student. After analysis and reflection on Oliveros's *Sonic Meditations*, participants made their own score to be presented to and realized by the training group. The score needed to integrate listening and sounding, dreaming, and moving, highlighting the importance of the *Sonic Meditations* and three modalities to the Deep Listening practice. This prompt also offered great versatility in the creation, documentation, and implementation of the scores.

Such flexibility and freedom are also reflected in other pieces by the Deep Listening community. As Bickley remarks, "ambiguity is a feature, not a bug."<sup>145</sup> While many of Oliveros's works are text scores,<sup>146</sup> not all Deep Listening pieces must be. Some rely on text, and others are presented as images or recordings. The two volumes of the

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<sup>143</sup> Bickley, interview by author.

<sup>144</sup> Loveless, interview by author.

<sup>145</sup> Bickley, interview by author.

<sup>146</sup> For example, text scores include *Deep Listening Pieces* (1971–90), *Earth Ears: A Sonic Ritual* (1989), *Four Meditations for Orchestra* (1997), *Heart of Tones* (1999), *Dissolving Your Earplugs* (2006), and *Inner/Outer Matrix* (2007). Scores with other visual elements and/or traditional music notation include *The Well and The Gentle* (1983), *Tree/Peace* (1984), *Wind Horse* (1990), and *Out of the Dark* (1998).

*Deep Listening Anthology: Scores from the Community of Deep Listeners* (2009, 2010) contain text scores, Western music notation, graphic notation, and other visuals.<sup>147</sup> Text scores may be read aloud as instructions, and improvised verbal scores are also common, following Oliveros's practice of revising the wording of *Sonic Meditations* for different situations.<sup>148</sup> Anthology contributors include Anne Bourne, Viv Corringham, Stuart Dempster, and Linda Montano, important figures who worked closely with Oliveros and continue to propel Deep Listening ideas forward in their own creative works. About this continued expansion, Reiley enjoys "witnessing deep emotional transformations in practitioners and observing how effectively DL [Deep Listening] facilitates authentic community-building. Surprises often arise from the simplicity yet profound impact of core practices."<sup>149</sup> These examples reflect the importance of relationships, collaboration, inclusivity, and expanded networks in the Deep Listening practice.

Within Deep Listening, power dynamics often hinge on knowledge or experience. For example, by completing the intensive trainings, certificate holders are officially "approved" to organize and facilitate workshops, and during pieces they can also significantly contribute to the tone by how they introduce and participate in a score. Yet balance is built in by leaving space for group input and direction. This is evident throughout the history of Deep Listening, as by ♀ Ensemble members deciding a

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<sup>147</sup> Marc Jensen and Tom Bickley, eds., *Deep Listening Anthology: Scores from the Community of Deep Listeners* (Kingston, NY: Deep Listening Publications, 2009); Marc Jensen, ed., *Deep Listening Anthology II: Scores from the Community of Deep Listeners* (Kingston, NY: Deep Listening Publications, 2010).

<sup>148</sup> Oliveros, *Deep Listening: A Composer's Sound Practice*, 29.

<sup>149</sup> Reiley, e-mail message to author.

meeting's agenda, multiple teachers trading off and co-facilitating sessions, and training intensives encouraging creative projects by all.

Additionally, different groups will necessarily bring different dynamics. This was evidenced in the ♀ Ensemble and Meditation Project; some members were involved in both and commented, "She [Oliveros] is forceful which is great for the [♀] ensemble where the women are intimate and strong. With ... the authoritarian P.M.E. [Project for Music Experiment] vibes, her role is too powerful, she dominates."<sup>150</sup> Still another reflected, "I feel a huge distance between her [Oliveros's] level and the level [of] the whole group and I feel more clearly how meaningless I'm making much of the ritual and meditation."<sup>151</sup> Awareness of others and flexibility are required to navigate different Deep Listening facilitations and can be practiced in these same settings.

While adults and seniors are often the audience majority at Deep Listening events, children and teens are also welcome. For example, at the 1981 Cabrillo Music Festival, Oliveros worked with thirty students from Freedom Elementary School to create and perform the theater piece "Monkey," and the children joined other audience members in a realization of her piece *Angels and Demons* (1980).<sup>152</sup> Oliveros also regarded babies as the best Deep Listeners<sup>153</sup> and strove to encourage creative expression in children.<sup>154</sup> The

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<sup>150</sup> Tysen Dauer, "The Varieties of Minimalist Experience: The Roles of Psychological States in the Reception of American Minimalism during the Long Sixties" (PhD diss., Stanford University, 2020), 165, <https://purl.stanford.edu/pc690tp8382>.

<sup>151</sup> Dauer, "The Varieties of Minimalist Experience," 160.

<sup>152</sup> Clippings - Reviews and mentions of Pauline Oliveros, 1981, box 17, folder 1, Pauline Oliveros Papers, MSS 102, Special Collections & Archives, University of California San Diego.

<sup>153</sup> Pauline Oliveros, "Quantum Listening: From Practice to Theory (to Practice Practice)," *SoundArtArchive*, December 1999, <https://s3.amazonaws.com/arena-attachments/736945/19af465bc3fc3c8d5249713cd586b28.pdf>.

Center for Deep Listening partnered with the Sunnyside Child Development Center's summer camp program in and after 2016 to provide workshops in creativity, contemplation, and the arts, which Hahn mentioned as a highlight of her Deep Listening work.<sup>155</sup>

Similarly, educators have found applications of Deep Listening for children. In classes with young musicians, Chase uses Oliveros's 1996 work *A Fluting Moment*, which guides flutists to use breath sounds and key clicks like water in a riverbed before recognizing people and objects with pitched sound; she reflects that kids understand the score immediately and do marvelous things with it.<sup>156</sup> Others suggest trying *Sonic Meditations* in the classroom, bringing Deep Listening to online education, and integrating it to health and well-being practices.<sup>157</sup> Reiley, who has been melding Deep Listening principles with his work as a composer, musician, and sound healer for years, expands,

I see Deep Listening evolving increasingly towards holistic integration within therapeutic, educational, and artistic spaces. I hope to see it gain broader

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<sup>154</sup> Pauline Oliveros, "Cues," *The Musical Quarterly* 77, no. 3 (Fall 1993): 378.

<sup>155</sup> "Partners," The Center for Deep Listening, 2024, <https://www.deeplisting.rpi.edu/programs/partners/>; Tomie Hahn, e-mail message to author, May 5, 2025.

<sup>156</sup> Ione and Chase, "Deep Listening Futures (Beyond Colonial Mind)." See also Claire Chase, "A Fluting Moment," masterclass, posted May 13, 2020, by Sounds Unheard, YouTube, [https://www.youtube.com/watch?v=t5RhrL\\_zDE0&t=228s](https://www.youtube.com/watch?v=t5RhrL_zDE0&t=228s).

<sup>157</sup> Susan Key, "Cognitive Consonance: Deep Listening in Today's Schools," in *Anthology of Essays on Deep Listening*, ed. Monique Buzzarté and Tom Bickley (Kingston, NY: Deep Listening Publications, 2012); Evan Tobias, "Deep Listening in the Music Classroom," *Imagine Possibilities for Music Teaching and Learning*, December 2, 2016, <https://evantobias.net/deep-listening-in-the-music-classroom/>; Kerri Laryea, "A Pedagogy of Deep Listening in E-Learning," *Journal of Conscious Evolution* 11, no. 2 (June 2018); Mercédès Pavlicevic and Angela Impey, "Deep Listening: Towards an Imaginative Reframing of Health and Well-being Practices in International Development," *Arts Health* 5, no. 3 (Aug 2013): 238–252.

recognition as an essential practice for cultivating compassion, mindfulness, and community connection globally.<sup>158</sup>

This same sentiment of inclusion is expressed through other Deep Listening-related projects, such as the Adaptive Use Musical Instruments (AUMI), a free downloadable software program continually developed by a team of creatives to accommodate listening and sound improvisation across abilities.<sup>159</sup> The program facilitates the production of sounds through a movement-tracking app. Growing from occupational therapist Leaf Miller’s work in drum circles with children and young adults experiencing limited mobility, AUMI was conceived by Miller and Oliveros in 2005 and has expanded to many team members.<sup>160</sup> That this project continues to improve and flourish after Oliveros’s passing speaks to her intention, as with much of her work, that such tools and practices should be available to communities for lasting use.

The development of intentional physical places also furthers these efforts. In midtown Kingston, New York, the Deep Listening Plaza was established in 2018 in honor of Oliveros. The greenspace was designed for free education, performances, installations, and concerts to “foster new ways of listening” and community engagement.<sup>161</sup> The space features an interpretive sign about Oliveros and Deep

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<sup>158</sup> Reiley, e-mail message to author.

<sup>159</sup> “Adaptive Use Musical Instruments,” Deep Listening Institute, 2021, <http://aumiapp.com/index.php>.

<sup>160</sup> Leaf Miller, “Going Deep: AUMI Since Before the Beginning,” in *Improvising Across Abilities: Pauline Oliveros and the Adaptive Use Musical Instrument*, ed. Thomas Ciufu, Abbey Dvorak, Kip Haaheim, Jennifer Hurst, IONE, Grace Shih-en Leu, Leaf Miller, Ray Mizumura-Pence, Nicola Oddy, Jesse Stewart, John Sullivan, Sherrie Tucker, Ellen Waterman, and Ranita Wilks (Newark, NJ: Terra Nova Press, 2024), 19–20. See also Drake Andersen, “Spaces for People: Technology, Improvisation and Social Interaction in the Music of Pauline Oliveros,” *Organised Sound* 27, no. 2 (2022): 169.

<sup>161</sup> “Still Listening in Kingston,” Ministry of Maat, 2025, <https://www.ministryofmaat.org/still-listening-kingston.html>.

Listening, open green space, and seating areas, with design plans promoting sound-inspired features, such as a fence mimicking the shapes of soundwaves and pavers creating interlocking ripples (fig. 5). Future plans for the area proposed transitioning the plaza to a courtyard surrounded by commercial and residential units, keeping the plaza integral to the community (fig. 6).

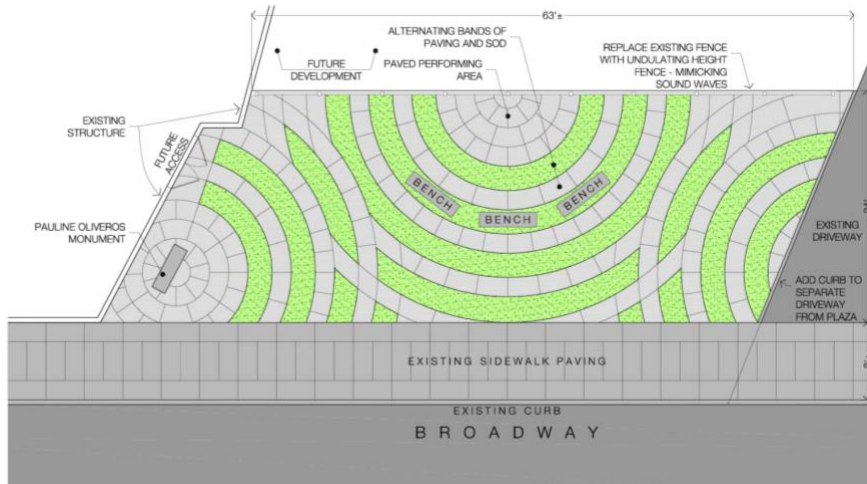


Figure 5. Design plan for Deep Listening Plaza. (“Deep Listening Plaza,” Ditto! Design! Portfolio, 2023.)

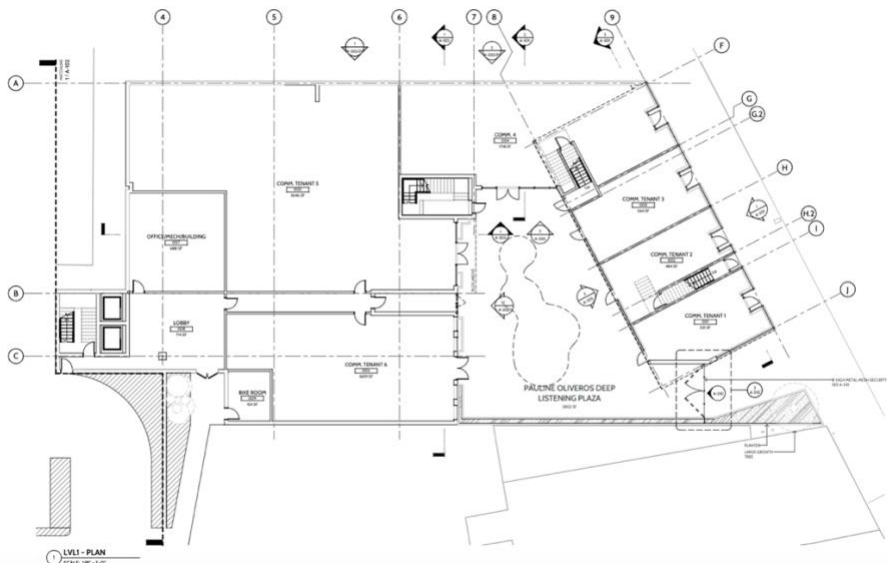


Figure 6. Future plans to incorporate the Deep Listening Plaza as a Community Courtyard. (“Redevelopment of 615 Broadway,” City of Kingston New York, June 18, 2025, <https://engagekingston.com/615-broadway>.)

In 2022, in response to a suggestion from Ione that the Center for Deep Listening might create an event to mark the ninetieth anniversary of Oliveros's birth, Loveless initiated the project "A Year of Deep Listening," an open call for scores by "all who have been touched by the philosophy and practice of Deep Listening."<sup>162</sup> It developed into a book project of 365 scores organized thematically, edited by Loveless and published in 2025.<sup>163</sup> Loveless remembers it as

probably the single most laborious and time-consuming project that I've ever been involved in. And yet it was the opposite of thankless; it was profoundly *thankful*. It was an honor to participate in such an enormous community endeavor in honor of Pauline.<sup>164</sup>

Contributors to the project varied; many are sound artists, composers, musicians, musicologists, and educators, and others have backgrounds in engineering, philosophy, anthropology, and physics. The majority of scores are typed text instructions, but about thirty are handwritten, graphic scores, drawings, photographs, or formatted text designs, like "breathfully," by JP Seabright, "Sinking Tones" by Ryan Probert, "Big Bang Piece" by Alan Curtis, and "Echolocation" by Kathy Kennedy (fig. 7). Circle imagery is also prominent in the scores, following Oliveros's mandala model as discussed in Chapter 3. Significantly, almost forty percent of the scores mention environments or engaging with place through listening, imitation, or metaphors, bolstering the connections between Deep Listening and environmental awareness. This is fitting given Loveless's reflection that "If the goal is to transform the way that we think and do things in the world towards just,

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<sup>162</sup> "Call for Deep Listening Text Scores for 'A Year of Deep Listening,'" The Center for Deep Listening, 2021, <https://www.deeplisting.rpi.edu/programs/call-for-scores/>; Loveless, interview by author.

<sup>163</sup> Loveless, *A Year of Deep Listening*.

<sup>164</sup> Loveless, interview by author.

sustainable futures, then maybe practices like [Deep Listening] are the way that we recenter, reground, and reconnect.”<sup>165</sup>


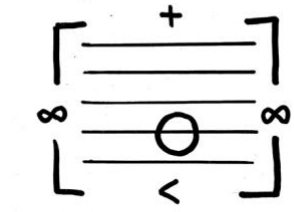
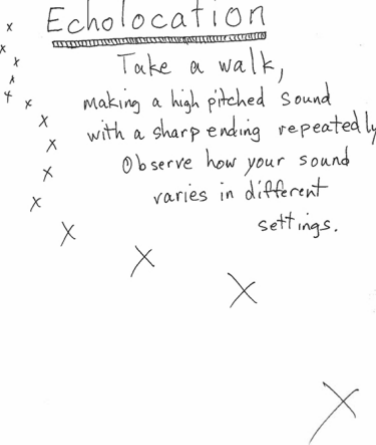
<p><b>breathfully</b></p> <p>take a breath take another one, deeper than before hold it, then let it out slowly now begin there are no further instructions</p>  <p>you are invited to follow this visual score with whatever you have at hand to make a noise</p> <p>instrument(s) or voice interpret as you wish</p> <p>but do it in the fullness of time, with the fullness of breath</p> <p>- JP Seabright</p>	<p><b>Sinking Tones</b></p> <p>at the end of the day observe the washing up that's left</p> <p>ok now think of some good ways to make music by dripping water on it</p> <p>rearrange the washing up: the plates, the bowls, the ramekins, the cutlery, the pots, the pans, the cups, the glasses &amp; more</p> <p>into your symphony of potential sounds: drips, dings, drops, surfs, swashes, glugs, gurgles, burbles, babbles, trickles &amp; so on</p> <p>turn on the tap as little as possible: with your finger direct, redirect, split, respit the water so it hits your instruments making music</p> <p>- Ryan Probert</p>
<p>A Year of Deep Listening   Day 170 of 365   The Center for Deep Listening</p>	<p>A Year of Deep Listening   Day 200 of 365   The Center for Deep Listening</p>
<p><b>Big Bang Piece</b></p>  <p>PLAY THIS NOTE AS IF IT WERE THE BIG-BANG</p> <p>- Alan Curtis</p>	<p><b>Echolocation</b></p> <p>Take a walk, making a high pitched sound with a sharp ending repeatedly. Observe how your sound varies in different settings.</p>  <p>- Kathy Kennedy</p>
<p>A Year of Deep Listening   Day 268 of 365   The Center for Deep Listening</p>	<p>A Year of Deep Listening   Day 298 of 365   The Center for Deep Listening</p>

Figure 7. Select non-text scores from *A Year of Deep Listening* project. (“A Year of Deep Listening,” The Center for Deep Listening, 2022, <https://www.deeplisting.rpi.edu/ayodl>.)

<sup>165</sup> “Stephanie Loveless in Conversation with IONE and Ashish Ghadiali,” posted April 29, 2024, by Radical Ecology, Vimeo, <https://vimeo.com/940849538>.

Deep Listening scores are adaptable, too, as evidenced by Jessa Mockridge's *Sonic Gut Meditations for Conference Call* (2021), exercises based on the original *Sonic Meditations* but to be performed virtually during the COVID-19 pandemic.<sup>166</sup> This flexibility may be crucial in some cases to attend to audiences of different abilities, ages, hearing ranges, mobilities, etc. since many Deep Listening scores assume hearing, able-bodied adults as participants. While such changeability is helpful, the Deep Listening practice would benefit from scores specifically made for people who are currently excluded from participation. As it stands, the spirit of versatility continues to serve the longevity of the practice, and Eriksson remembers that

during the pandemic years it was suddenly a shift and bigger usage of working with Zoom and other videoconferencing softwares to conduct DL [Deep Listening] workshops and series. ... Alongside this[,] the yearning for meeting in physical space was also getting more and more attractive also as there are other qualities around these gatherings. Now we live in a hybrid world, sometimes we meet in the flesh and sometimes in the landscapes of earth.<sup>167</sup>

It is worth noting that scores were adjusted for Zoom-based meetings before the pandemic, a testament to Oliveros's consistent investment in new digital and software technologies to expand possibilities. Teachers like Reiley recognize the challenge of "maintaining intimacy and immediacy in virtual settings without losing the embodied essence central to DL [Deep Listening]," while also discerning how the practice continues the "beautiful interplay between preserving core teachings and innovating new practices relevant to contemporary contexts."<sup>168</sup>

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<sup>166</sup> Jessa Mockridge, "sucking~sensing~feeling~phantasying: Sonic Gut Meditations for Conference Call," 2021, [https://www.jessamockridge.com/sonic\\_gut.html](https://www.jessamockridge.com/sonic_gut.html).

<sup>167</sup> Eriksson, e-mail message to author.

<sup>168</sup> Reiley, e-mail message to author.

As part of these continued efforts, the Center for Deep Listening models a balance of global and focal attention in its projects. The virtual trainings, intensives, and workshops have a global reach, as did *A Year of Deep Listening*. Yet there is also an intentional turn to focal attention on the local level, for example with an upcoming residency and commission at RPI for “site-specific works that engage our campus community (located in Troy, New York) in Pauline Oliveros’ practices of sonic awareness”<sup>169</sup> for which Loveless is “excited to build bridges with our campus community.”<sup>170</sup> As an example of combining global and focal awareness, a planned collaboration with Ximena Alarcón Díaz in Colombia will research

how Deep Listening, with its North American origins, might be transformed by the ways in which it is taught and practiced in a Latin American context. We understand that context necessarily shifts and informs the way that we teach and practice Deep Listening, which is important given our increasingly international community.<sup>171</sup>

Such endeavors showcase how the Center for Deep Listening personnel lets Deep Listening tenets guide them.

Reviewing Deep Listening backgrounds, philosophies, training programs, and works reveals the intention of inclusion. For instance, the introductions to the original *Sonic Meditations* state “most all of the meditations are available to anyone who wishes to participate regardless, or in spite, of musical training. All that is required is a willing

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<sup>169</sup> “Call for Proposals: Deep Listening Residency & Commission,” The Center for Deep Listening, 2025, <https://www.deeplisting.rpi.edu/programs/campus-commission/>.

<sup>170</sup> Loveless, interview by author.

<sup>171</sup> Loveless, interview by author.

commitment to the given conditions.”<sup>172</sup> And as Katherine Setar assesses, “Oliveros’s notion of ‘inclusiveness’ therefore is a manifestation of a desire for a kind of unity and wholeness” within performing groups, individuals, and society.<sup>173</sup> About this characteristic, Eriksson notes, “Already since my first encounters with the Deep Listening community I have been drawn to the inclusivity of the people and it has truly been so inspiring to learn more ... It has meant [a lot] for me both in my other teachings and my own artistic practices.”<sup>174</sup> Such inclusion welcomes multiple perspectives.

Yet certain groups – for instance, from non-Western cultures, low socioeconomic backgrounds, or with disabilities – are often excluded or underrepresented in the Deep Listening community. This understandably results in limitations for new audiences or if attempting to apply Deep Listening more broadly. Deep Listening teachers like Bickley acknowledge the practice’s European lineage and, as he articulates, teachers are “trying to expand and work out models in which we do honor other traditions and other voices and other parts of the world.”<sup>175</sup> Loveless elaborates, “Deep Listening is a community-based practice. As we have worked to lower barriers of access to our courses, this community has broadened, and so has the practice.”<sup>176</sup> Reiley recognizes that “Deep Listening’s current Western-centric focus largely stems from its origins and institutional

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<sup>172</sup> Pauline Oliveros, “Introduction II,” in *Sonic Meditations: March–November 1971* (Baltimore, MD: Smith Publications, 1974). Underlined in original.

<sup>173</sup> Setar, “An Evolution in Listening,” 351.

<sup>174</sup> Eriksson, e-mail message to author.

<sup>175</sup> Bickley, interview by author. Loveless importantly notes that not all facilitators are of European heritage; Loveless, e-mail message to author.

<sup>176</sup> Loveless, interview by author.

presence. However, there's growing awareness and desire within the community to authentically expand this practice beyond Western contexts," and people of color regularly attend his weekly sound community sessions.<sup>177</sup>

Deep Listening's widely known Western basis could also help explain why some Indigenous artists are resistant to or critical of its practices. Still, both Indigenous and Western notions of deep listening frame it as relational and dynamic, even though how entities engage in sonic relationships may differ. Deep Listening could gradually provide

more of a benevolent, very gentle, persuasive lure to all of society to listen. It's not a hallmark of Western culture. But it could be. ... Deep Listening offers some hope of, even [in] North Atlantic traditions of academia and culture and economics, turning it more into a listening culture, into what is needed.<sup>178</sup>

To this end, the need continues for increasing accesses and diversity, discussed further in the following chapters.

Next, I look closely at several artists with varying levels of connection to the Deep Listening community and practice. I will specifically discuss how they explore relational environmental listening through sound recording technologies and dreams, plus how their consideration of environments and the more-than-human world shapes creative practices and outcomes.

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<sup>177</sup> Reiley, e-mail message to author.

<sup>178</sup> Bickley, interview by author.

## CHAPTER 5

### DEEP LISTENING AND ENVIRONMENTAL AWARENESS

#### IN CURRENT ARTISTIC PRACTICE

The Center for Deep Listening has furthered Oliveros's multifaceted goals with its programming and publications, affecting artists, scholars, and practitioners across disciplines, genders, and geographies. This chapter focuses on three artists representative of current Deep Listening directions through case studies: sound artist Ximena Alarcón Díaz, performance artist Tina Mariane Krogh Madsen, and multimedia artist Kite. Their creative activities have been inspired by heightened environmental awareness through sensitive listening and have left a mark on international audiences. In the following sections, I first explain how I chose these artists for the case studies and then introduce each of them before concentrating on selected works and readings thereof.

#### **Case Study Selection**

When selecting the three artists as case studies, I first reviewed their relationships to Deep Listening, which span from being a certified Deep Listening mentor to being loosely connected to the Center for Deep Listening events. I then looked for how they value sound and listening practices in contexts of environmental awareness and care as exhibited in their artistic output. Both Alarcón Díaz and Madsen cite Deep Listening experiences as significant to their current projects, and each contributed scores to *A Year of Deep Listening* (2025), a collection of 365 scores by the Deep Listening community in honor of Oliveros's ninetieth birthday. Kite has worked with the Center for Deep

Listening, but her listening philosophy is grounded in her Lakhóta heritage and serves as an example of listening practices in dialogue with, but not dependent on, Deep Listening.

Considering diversity in culture, location, gender, and artistic medium, and to enable close readings, I chose artists who were willing to openly discuss their practice with me and whose works reflect environmental awareness in subjects, themes, materials, outcomes, and participants. Born in different years and places, the artists represent Colombian, Danish, and Oglála Lakhóta cultural backgrounds and pursue different artistic directions, including telematic improvisation, performance art, and multimedia compositions. I prioritized artists and works reliant on listening to center various bodies as sites of knowledge. I was interested in how their pieces reflect marginalized and/or silenced populations and the Deep Listening modalities of listening, dreaming, and moving. I also explored how they incorporate sound recording technologies and dreaming to expand inner and outer awareness.

In the following studies, I examine artistic parameters of the selected works, including sounding and listening bodies, spatiality and environmental awareness, sound sources and their sonic properties, and temporality. Important factors in each artist's creative output are how bodies absorb, make, and experience sounds, as are the types of bodies that are prioritized. Framing bodies and environments as sites of listening and sounding links them together. The performance spaces are essential, for instance, in terms of how participants and sounds can move and interact with each other, which impacts our listening experiences, as discussed in previous chapters. For performances I was unable to attend, I rely on the artists' observations, audience reactions, and online recordings to virtually experience the place and study the works. Although joining virtual environments

is common for Deep Listening workshops, I recognize that online recordings present a compressed and mediated version of live events and sounds, and thus I enacted select scores as another means of study. In addition to bodies, sound sources include various equipment used in the creation and performance of pieces, such as electronic devices, rocks, instruments, software, etc. These components often inform or limit logistical decisions and directly affect the sonic qualities produced (described in terms of frequency, amplitude, and duration). The sonic qualities interplay with the surroundings, participant emotions, states of mindfulness, and complexity of information to shape the sense of time or timelessness of a piece during performance, pertaining to different ideas and temporal perception as discussed in Chapter 4. Further, various types of biological and environmental rhythms, defined by Henri Lefebvre as interaction between place, time and energy, “coexist and interact with each other and with rhythms of their human and nonhuman environments.”<sup>1</sup>

The works chosen in each case study illuminate a diversity of subjects, highlighting engagement with migrant women, flowers, stones, birds, and dreams. The works’ themes feature balance and healing, mutual dependence, and making kin with machines. The artists highlight kinship with and recognition of the more-than-human world, sensuous engagements with environments and other beings, responsible behavior, being part of nature, and imagining alternative treatments of the earth. Methodologically, each artist creates works from a place of listening and personal reflection, and playback

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<sup>1</sup> Henri Lefebvre, *Rhythmanalysis: Space, Time, and Everyday Life*, trans. Stuart Elden and Gerald Moore (New York, NY: Continuum, 2004); Sabine Feisst, “Hearing Borderland Temporalities: Sound Patterns of U.S.-Mexico Border Fortification,” in *Different Rhythms*, ed. Francesco Michi and Stefano Zorzanello (Giulianova, ITA: Galaad Edizioni, 2019), 41.

technology often helps exhibit sounds from imaginative or dream spaces. For Alarcón Díaz and Madsen, Deep Listening provides a way to listen both with and without sound recording technologies; for Kite, Lak'hóta ethics similarly offer a strong basis for listening and creating works.

The following case studies build on the contexts of Deep Listening presented in Chapters 3 and 4, incorporating all modalities, strengthened by collaborations, and reflecting Indigenous critiques. Alarcón Díaz and Madsen have expanded Oliveros's practice, showing different examples of creative interactions between humans and the more-than-human world. Kite lends her Indigenous voice in conversation with, but outside, Deep Listening for listening to nonhuman beings. I include her work to show how the Center for Deep Listening could move forward with their efforts and programming outside of the Deep Listening community and come to terms with Indigenous critiques of the practice. That all three artists illustrate similar themes shows important and current trends in Deep Listening, which have not received the attention deserved in musicological discourse.<sup>2</sup>

### **Ximena Alarcón Díaz: Listening Between Migration and Memory**

Sound artist and researcher Ximena Alarcón Díaz (b. 1972) is a prominent member of the Deep Listening community, serving as a certified facilitator and presenting widely about the practice in her research, publications, performances, and

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<sup>2</sup> Other prominent Deep Listening artists include Tom Bickley, China Blue, Anne Bourne, Monique Buzzarté, Raylene Campbell, Viv Corringham, Stuart Dempster, Bjorn Eriksson, Tomie Hahn, Lisa E. Harris, Brenda Hutchinson, Linda Montano, Lisa Barnard Kelley, Kathy Kennedy, Stephanie Loveless, Norman Lowrey, Miya Masaoka, Michael Reiley, Senem Pirlir, Jane Rigler, Sharon Stewart, Suzanne Thorpe, Doug Van Nort, Ellen Waterman, and Jennifer Wilsey.

workshops.<sup>3</sup> With technological training for a variety of platforms, like JackTrip, she often engages in telematic collaborations with trained and untrained musicians, transmitting sound across large physical distances in real time. She has performed with the Female Laptop Orchestra, All Women’s Networked Jam Session, NowNet Arts Hub, and Raspberry Pi Ensemble, and she has also done work in electroacoustic composition and learned about Soundpainting, a gestural conducting language for group improvisation.<sup>4</sup> When performing as a vocalist, she typically improvises using spoken words and vocalizations in English and Spanish.

Alarcón Díaz uses Deep Listening, and especially the dream modality, to explore narratives of migration and guide preparation for telematic performances with migrants.<sup>5</sup> From this practice-based work, she proposes that “dreams and telematics are metaphors of our own migrations.”<sup>6</sup> Overall, her work reflects an interest in identity, migration, and memory, especially in the context of Deep Listening. She draws on the modalities for relational listening to multispecies sounds and experiences. Below, I will show how specifically her INTIMAL project and “Dreaming with flowers while awake” text score both integrate the Deep Listening practice and reveal ways to increase environmental awareness.

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<sup>3</sup> Some sources only include the last name Alarcón. It is the Latin American custom to include the family names of both parents (Alarcón Díaz), and she chose to use Díaz to acknowledge her mother and honor women in her work. She clarified that she hyphenates her two last names (Alarcón-Díaz) in Anglophone environments. Ximena Alarcón Díaz, interview by author, May 23, 2024.

<sup>4</sup> “Biography,” Ximena Alarcón Díaz, 2024, <https://www.ximenaalarcon.net/bio/>; “Full CV,” Ximena Alarcón Díaz, November 2021, [https://www.ximenaalarcon.net/\\_files/ugd/611cf5\\_47844ebbaa964c688e888fe461d5d76b.pdf](https://www.ximenaalarcon.net/_files/ugd/611cf5_47844ebbaa964c688e888fe461d5d76b.pdf); “Soundpainting,” 2024, <https://www.soundpainting.com/soundpainting>.

<sup>5</sup> Alarcón Díaz, interview by author.

<sup>6</sup> Alarcón Díaz, interview by author.

## Early Listening Experiences

Alarcón Díaz grew up in Colombia and, though now living in the U.K., maintains strong ties to her Colombian roots through sound memories. She recalls,

I grew up in a quiet neighborhood of an intense South American city: Bogotá – Colombia. The neighborhood was quiet, and the sonic space in my family house was joyful, mediatic, and with traces of country life. I listened to television, music from different generations and Latin regions, the PSHHHtssstssfffff of a pressure cooker, barking dogs, chirping canaries, parakeets balancing in a narrow wall walking towards the hot chocolate pan. I keep listening to that house in my dreams, wherever I migrate.<sup>7</sup>

Her childhood homelife offered a rich sonic environment, and her recollection displays an early awareness of environmental sounds and their lasting impact. Voice also played an important role in her life. Scholar Ana María Ochoa Gautier posits voice as a means of blending “culture” and “nature” in Colombia, finding that “persistent underlying understandings of the acoustic today emerged or were consolidated during the early postcolonial period, especially regarding the way ‘local sounds’ of different entities and of peoples were understood as ‘voices.’”<sup>8</sup> Sound as voice was central to Alarcón Díaz’s life in Colombia, notably inclusive of multiple species,<sup>9</sup> and such listening philosophies shaped her work.

During her early years growing up, Colombia experienced conflict. She observed the city’s struggle with public transportation also impacting its “social, cultural and

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<sup>7</sup> “Our Mentors and Teachers,” The Center for Deep Listening, 2025, <https://www.deeplistinging.rpi.edu/training/teaching-certification/mentors-teachers>.

<sup>8</sup> Ana María Ochoa Gautier, *Aurality: Listening and Knowledge in Nineteenth-Century Colombia* (Durham, NC: Duke University Press, 2015), 5.

<sup>9</sup> Ochoa Gautier, *Aurality*, 3.

political flow” and contributing to a sense of “uncertainty and chaos.”<sup>10</sup> Within this environment, she studied music, technology, and communication and earned a Bachelor of Arts in Social Communication from the Universidad Externado de Colombia (1992). She later reflected on how the complex Colombian political armed conflict between the state, paramilitary, and guerrilla forces created social trauma,<sup>11</sup> which marked her own migratory experience when she moved to Spain, completing a Master of Arts in Communication and Education from Universitat Autònoma de Barcelona in 1998. For migrants, feelings of guilt from leaving conflict can settle in the body, and she turned to dreams as a space to listen to her experience and process because, as she says, dreams “invite us to, from the perspective of IONE, of Deep Listening, to be freer, to detach, and to LOJ, to lift off judgment, and that works a lot in migration ... in general for human beings, but in migration especially.”<sup>12</sup> In line with Lefebvre’s concept of rhythmanalysis to observe various patterns in a space, she also listened to how the rhythms and pacing of the Barcelona underground transportation system impacted her body and movement in ways different from Bogotá, noticing that people walked faster, places seemed closer, and time was precise.<sup>13</sup> Such awareness of rhythms would serve her later work with other commuters, to be discussed below.

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<sup>10</sup> Ximena Alarcón, “Embodied Sonic Memories of Commuting Underground,” *IA, the Journal of the Society for Industrial Archeology* 43, no. 1/2 (2017): 81.

<sup>11</sup> “Unravelling / Desenredando,” Ximena Alarcón Díaz, 2025, <https://www.ximenaalarcon.net/unravelling>. Thank you to Dr. Alarcón-Díaz for sharing the Unravelling / Desenredando tour publication document with me.

<sup>12</sup> Alarcón Díaz, interview by author.

<sup>13</sup> Alarcón, “Embodied Sonic Memories of Commuting Underground,” 81.

Further, living in Spain influenced her sonic identity as her accent changed without her noticing. She wrestled with this, bound in a history of colonization, when a family member pointed out she was “speaking like a Spanish person.”<sup>14</sup> Understanding the bond between voice and place in Colombian culture as explained by Ochoa Gautier further heightens the impact of this rift. Alarcón Díaz’s strong consciousness of her Colombian identity and embodied migratory experience significantly impacted her artistic work and practice, and the influence of her educational background in communications and technology can be detected in her treatment of sound as communication and connection to support communities, as I will show.

She began creating works in the late 1990s focused on multimedia installations. One of her first pieces, *A to Z* (1998), was an installation for blackboard and four loudspeakers. It highlights sonic memory, an element that remains prominent in her work. *A to Z* hinges on Alarcón Díaz’s recollection of sounds made when writing in chalk. To start, she recorded the sonic gesture of letters in the Spanish alphabet as she wrote them on a blackboard three times. Each letter begins with an accentuated short, stark attack as the chalk makes contact with the board, followed by whooshing sounds as the letters are drawn. The speed and tonal quality of individual letter repetitions are similar, suggesting that Alarcón Díaz drew them the same each time. Information about the texture of the board and chalk, shape of the letter, direction changes, pressure, and surrounding space is conveyed through the sounds.

In the three-and-a-half minute recording used for the *A to Z* installation, the short, prominent, mid-frequency range, raspy scratches of the written letters are punctuated by

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<sup>14</sup> Alarcón Díaz, interview by author.

pauses and fades, and she selected the varying number of repetitions for each letter based on their sonic qualities. The recording was then played repeatedly through four mini loudspeakers onto “an empty blackboard, as if it were a screen for the projection and evocation of memories of literacy.”<sup>15</sup> The piece relies on a cultural sonic memory of language. She also gives voice to the chalk itself, using sound to assert its presence. The letter sounds imply the gestures necessary to write them, potentially tying childhood memories to bodily experiences for listeners since “when we hear incidental human-made sounds, such as door-closing or footsteps, we infer the corresponding actions without needing to see them performed.”<sup>16</sup> The focus on sound and reliance on the Spanish alphabet shows that Alarcón Díaz was listening closely and emphasizing sonic ties with her history from the beginning of her artistic work. These aspects of sound, listening, memory, and movement also relate to the Deep Listening modalities she later found.

Her artistic output in the early 2000s focused on media production and featured environmental awareness. For example, she was co-coordinator of joystick-based navigation experiences through Colombian parks for the Maloka interactive museum in Bogotá (2000); she was a programmer and designer for the CD *Fuquene* (2000), intended to help save the Fuquene Lake in Colombia; and she programmed and designed “Amigos de la Cuenca” (2001), material on CD for teaching children about environmental basins.<sup>17</sup> This same awareness of place also served her move to England. By taking in her

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<sup>15</sup> ximenaalarcon, “A to Z - 1998,” SoundCloud audio, posted 2014, <https://soundcloud.com/speakingof/a-to-z>.

<sup>16</sup> Arnie Cox, *Music and Embodied Cognition: Listening, Moving, Feeling, and Thinking* (Bloomington, IN: Indiana University Press, 2016), 25.

<sup>17</sup> “Full CV,” Ximena Alarcón Díaz, November 2021, [https://www.ximenaalarcon.net/\\_files/ugd/611cf5\\_47844ebbaa964c688e888fe461d5d76b.pdf](https://www.ximenaalarcon.net/_files/ugd/611cf5_47844ebbaa964c688e888fe461d5d76b.pdf).

surroundings, she found shared qualities in city sounds and public transportation as waypoints to connect her new location with her home country. She remembers,

the only thing that again kept a relationship with me was the London Underground with my past. So it was about mobility. It was about diversity. It was about then a sound that was very noisy. And Bogotá is a very noisy city, too. So yes, you look for reference. So that's how, in a summary, I can feel it's about rhythm, it's about soundscapes, surrounding soundscape, but also about voice.<sup>18</sup>

Mobility and listening to environmental sound served as touchstones to anchor her identity while she migrated to different countries; importantly, these also appear as themes in her creative work.

### Listening to Migration

In England, Alarcón Díaz earned a Ph.D. in Music, Technology and Innovation from De Montfort University in Leicester (2007) and began securing fellowships and research awards.<sup>19</sup> Her dissertation, “An Interactive Sonic Environment Derived from Commuters’ Memories of the Soundscape: A Case Study of the London Underground,” draws on memory while grounded in acoustic ecology listening modes and soundscapes as described by R. Murray Schafer.<sup>20</sup> She listened intently to compare sounds of the London Underground with that of Mexico City and the Paris Metro, focusing on trains and the commuting experience as a kind of dream state for crossing boundaries.<sup>21</sup> This

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<sup>18</sup> Alarcón Díaz, interview by author.

<sup>19</sup> “Full CV,” Ximena Alarcón Díaz.

<sup>20</sup> Ximena Alarcón Díaz, “An Interactive Sonic Environment Derived from Commuters’ Memories of the Soundscape: A Case Study of the London Underground” (PhD diss., De Montfort University, 2007), <https://core.ac.uk/download/pdf/228183973.pdf>.

<sup>21</sup> See Alarcón, “Embodied Sonic Memories of Commuting Underground,” 81–92.

was an extension of her early listening to how the Bogotá and Barcelona transportation systems impacted her body and movement.

It was around this time, in 2008, that Oliveros visited De Montfort University to give guest presentations, workshops, and concerts. Alarcón Díaz spent time with Oliveros and found significance in her understanding of sound, tying to an already established interest in environmental sound and memory. Alarcón Díaz recalls,

And what was very interesting is that immediately when she [Oliveros] started asking me what I did, I started to change my perception of sound. After so many years of being in sound, and in listening. Because I felt that she brought a non-judgmental approach to listening and sound ... The word ‘noise’ was not part of her vocabulary, necessarily ... And she brought for me the inner listening.<sup>22</sup>

At Oliveros’s prompting of “What would you like to listen to?” Alarcón Díaz started listening to migrations more intentionally.<sup>23</sup> Deep Listening ultimately facilitated this perspective and provided a framework for her to apply in studies with commuters. She also drew on philosopher Michel de Certeau’s concepts to find freedom of movement in limited spaces.<sup>24</sup> Certeau, in discussing the ways people use spaces in their everyday lives, frames train cars as a means of navigation and incarceration, describing them as a place where “rest and dream reign supreme.”<sup>25</sup> Alarcón Díaz extends this idea to find

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<sup>22</sup> Joep Christenhusz, host, *Listening to the In-Between*, podcast, season 3, episode 21, “Part I: Introducing Pauline Oliveros and Deep Listening,” Radio ArtEZ, September 19, 2022, <https://studiumgenerale.artez.nl/nl/studies/all/listening+to+the+in+between+part+1+introducing+pauline+oliveros+and+deep+listening>.

<sup>23</sup> Alarcón Díaz, interview by author; Ximena Alarcón, “Sonic Migrations: resonances that hold us as we walk through telematic rituals,” talk, October 24, 2022, posted December 7, 2022, by Royal Conservatoire, YouTube, <https://www.youtube.com/watch?v=7UxdYwjZG1c>.

<sup>24</sup> Ximena Alarcón, “Embodied Sonic Memories of Commuting Underground,” *IA, the Journal of the Society for Industrial Archeology* 43, no. 1/2 (2017): 81; Michel de Certeau, *The Practice of Everyday Life* (Berkeley, CA: University of California Press, 1984), 111–114.

<sup>25</sup> Michel de Certeau, *The Practice of Everyday Life* (Berkeley, CA: University of California Press, 1984), 111.

“new perceptions” and approach “a deep listening experience” in virtual train environments through her work *Sounding Underground* (2009).<sup>26</sup>

*Sounding Underground* grew from Alarcón Díaz’s evaluation of migration and traveling to become an online installation, created with programmer Peter Batchelor and with production support from Ron Herrema.<sup>27</sup> Listeners can virtually traverse London, Paris, and Mexico City metros online via a sound score accompanied by images. The sounds heard come from ethnographic work with volunteer commuters who made audio recording of their metro travels.<sup>28</sup> In *Sounding Underground*, participants can pass through the metros and within areas of them, like the entrance, platform, and carriage cars, virtually experiencing the sounds of crowds, announcements, and trains.<sup>29</sup> Memories from commuters are featured as texts, and listeners are also invited to write their own memories to be displayed on another page of the site. It is recommended to wear headphones and be in a dark room so the 3D effects from binaural recordings can be fully felt.

In creating *Sounding Underground*, Alarcón Díaz concentrated on participants’ embodied experiences, which brings to mind Lefebvre’s different patterns of rhythmic interaction between a body and other activities in a place. For commuters, these rhythms

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<sup>26</sup> Alarcón, “Embodied Sonic Memories of Commuting Underground,” 90–91.

<sup>27</sup> Ximena Alarcón, *Sounding Underground*, 2009, <http://soundingunderground.org/index.html>.

<sup>28</sup> These metro recordings were also used by groups from Paris and Mexico to improvise telematically for performances of *Listening and Remembering* (2008–2009), where participants moved through the “real,” “memory,” and “performance” spaces; see “Improvisation ‘Listening and Remembering,’” posted April 30, 2009, by Ximena Alarcón, Vimeo, <https://vimeo.com/4411565>.

<sup>29</sup> A sample is available at “Interactive Sonic Environment: London Underground,” posted September 5, 2014, by Ximena Alarcón, Vimeo, <https://vimeo.com/105343930>.

included their own movement, like walking through corridors, standing on escalators, waiting on platforms, and sitting on train cars. The train schedules also contributed rhythmic layers, with trains starting and stopping, doors opening and closing, and people moving between platforms and train cars in different rhythms depending on location and time of day. Along with this were sonic patterns brought about by the breathing and voices of passengers, recorded announcements, drivers, and street vendors, each with different goals.<sup>30</sup> Commuters also talked about their bodies when expressing feelings, so “in this commuting experience, the process of listening and remembering brought the body into play as an explicit interface.”<sup>31</sup> Alarcón Díaz found that commuters underground tuned to their own bodies and vital organs, while commuters closer to the surface focused more on environments, either seen or imagined.<sup>32</sup> She suggested that by going underground, commuters disengage from the above world and “when listening, they experience embodiments as ways of remembering,”<sup>33</sup> connecting intimately to Deep Listening modalities of listening, dreaming, and moving. In *Sounding Underground*, listeners traverse the online environment at their own pace, and they can choose to engage in focal or global attention to guide their experience.

Moreover, as Deep Listening facilitates listening to “in-between” sounds, like the radio static Oliveros noticed as a child, so too does *Sounding Underground* allow for building awareness of “in-between” mobility and listening experiences of physical and

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<sup>30</sup> For more about these rhythms, see Alarcón, “Embodied Sonic Memories of Commuting Underground,” 84–88.

<sup>31</sup> Alarcón, “Embodied Sonic Memories of Commuting Underground,” 83.

<sup>32</sup> Alarcón, “Embodied Sonic Memories of Commuting Underground,” 85.

<sup>33</sup> Alarcón, “Embodied Sonic Memories of Commuting Underground,” 90.

virtual environments. Alarcón Díaz views it “as a practice that expands the experience of the body within the sound space-time continuum, re-claiming mobility, opening a path for transcendence of our technological condition.”<sup>34</sup> Listeners reacted to *Sounding Underground* by immersing themselves in the virtual environments, pointing out the sonic similarities between the three cities, and enjoying the spaces without being there physically.<sup>35</sup> The piece combines features of embodied experiences, sound, memory, and migration with the tenets of Deep Listening.

### Influence of Deep Listening

Alarcón Díaz started her own Deep Listening practice in 2008, earning certification in 2012. She also trained in chi kung (or qigong), a meditative movement and breathing practice, receiving her elemental teacher certificate in 2014. Her interest in somatic philosophies is not surprising given the role practices like Tai Chi played in the development of Deep Listening. Since 2015, Alarcón Díaz has served as a Deep Listening certification mentor and teacher with the Center for Deep Listening. As an artist researcher, she has contributed numerous articles, blogs, book chapters, lectures, workshops, and podcasts about Deep Listening worldwide. Indeed, she led a workshop in Berlin that influenced Madsen’s Deep Listening trajectory. Alarcón Díaz counts both Ione and Heloise Gold as eminent collaborators with Oliveros, and all of her text scores

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<sup>34</sup> Alarcón, “Embodied Sonic Memories of Commuting Underground,” 91.

<sup>35</sup> Alarcón, “Embodied Sonic Memories of Commuting Underground,” 90.

and creative writings are published in connection with Deep Listening projects.<sup>36</sup> She remains a prominent voice in the Deep Listening community.

The impact of Deep Listening is reflected in Alarcón Díaz's artistic output, particularly through telematic and networked improvisations, which Oliveros began exploring in the early 1990s. For example, in 2020 Alarcón Díaz developed the series SENTIENT where "Nine people across the world joined [her] in six sessions, divided in three themes: listening to place, listening for presence and listening in-between."<sup>37</sup> She has used internet technology to connect performers across physical distances in real time since 2008 as both a director and performer, with many telematic performances taking place in migratory contexts involving untrained musicians. Significantly, she also views dreams, as in the Deep Listening practice, as a means to facilitate connection across large distances. These aspects are consistent across her work. She incorporates Deep Listening with her Colombian heritage through Sonic Migrations, "listening rituals that revolve across four spheres of migratory memory ... as the resonances left in between the borders we cross when we tune in and meet others across distant locations."<sup>38</sup> Such awareness of

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<sup>36</sup> Ximena Alarcón, "Secreto a Voces [An Open Secret]," Still Listening, 2017, <https://stilllisteningoliveros.com/secreto-voces-open-secret/>; Ximena Alarcón, "Roots," in *Deep Listening Anthology II: Scores from the Community of Deep Listeners*, ed. Marc Jensen (Kingston, NY: Deep Listening Publications, 2010); Ximena Alarcón, "You are Naked!" and "Suelo Fertil: anew born," in *Spell Breaking: Remembered Ways of Being*, ed. Carole Ione (Kingston, NY: Deep Listening Institute, 2013); Ximena Alarcón, "Dreaming with flowers while awake," The Center for Deep Listening, 2022, <https://www.deeplisting.rpi.edu/2022/08/21/day-84-of-a-year-of-deep-listening>; Ximena Alarcón, "'Multisueño/Multidream,'" The Center for Deep Listening, 2022, <https://www.deeplisting.rpi.edu/2022/12/30/day-215-of-a-year-of-deep-listening>.

<sup>37</sup> Ximena Alarcón, "SENTIENT series @Listening Arts Channel," Listening, Performing, Transforming, December 31, 2020, <https://listeningperformingtransforming.wordpress.com/2020/12/31/sentient-series-listening-arts-channel/>.

<sup>38</sup> "Sonic Migrations," Ximena Alarcón Díaz, 2023, <https://www.ximenaalarcon.net/sonicmigrations>.

and movement through liminal spaces, both physical and remembered, rely on Deep Listening, and are also found in her INTIMAL project.

## INTIMAL

### Background

Listening for place and telepresence are hallmarks of Alarcón Díaz's INTIMAL (2017–2024, translates to “intimate”), a multi-faceted project and framework centered on software development that encourages relational listening and focuses on the body as a site of memory in the context of migration. Human migration broadly involves the dimensions of time and space, and changes in these often necessitate the processing of emotions and require “necessary cultural and psychological adjustments of individuals, affecting their cultural identities.”<sup>39</sup> As we will see, Alarcón Díaz draws out the elements of time, space, and identity in the INTIMAL system, and the same elements connect with the Deep Listening practice.

Meeting Oliveros in 2008 spurred Alarcón Díaz to remember and listen to her own migratory experience between geographies and cultures,<sup>40</sup> and she cites Deep Listening as inspiration for INTIMAL, along with “listening to the in-between sonic space of the human migratory experience.”<sup>41</sup> Early INTIMAL participants did Deep

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<sup>39</sup> Thomas Niedomysl and Urban Fransson, “On Distance and the Spatial Dimension in the Definition of Internal Migration,” *Annals of the Association of American Geographers* 104, no. 2 (2014): 357; Samson Maekele Tsegay, “International Migration: Definition, Causes and Effects,” *Genealogy* 7 (2023): 2, 6.

<sup>40</sup> Alarcón, “Sonic Migrations.”

<sup>41</sup> Ximena Alarcón Díaz, “Breathing (as Listening): An Emotional Bridge for Telepresence,” in *The Body in Sound, Music and Performance: Studies in Audio and Sonic Arts*, ed. Linda O’Keeffe and Isabel Nogueira (London, ENG: Focal Press, 2022), 243, 245–246. See also Ximena Alarcón, “Networked

Listening exercises, including *Sonic Meditations*, together “to access the layers of [their] sonic migrations through meditation, listening in dreams, and improvising with voice and body movement.”<sup>42</sup> In these Deep Listening score realizations, Alarcón Díaz worked with Colombian and Latin American migrant women in Europe to bring voices, dreams, and movement together so they could tell about their migration experiences; participants included Anita Ramírez, Bruna Scott, Calu, Liliana Rodríguez, Juliana, La Chiqui, Myriam Ojeda Patiño, Silvia Villalba Martínez, and Violeta Ospina Dguez.<sup>43</sup> Alarcón Díaz honors participants in her creative endeavors and widens accessibility by often presenting information about INTIMAL in both English and Spanish.

The four main components of the INTIMAL system are body movement, voice, oral archives, and memory of place, visualized by intersecting arches that allow for multiple combinations of the elements and show how they impact one another (fig. 8). In the first research stage for INTIMAL, wearable infrared markers and breath sensors at the Centre for Interdisciplinary Studies in Rhythm, Time and Motion at the University of Oslo were used to collect movement and vocal data as groups of women improvised together in response to an oral archive of migrant testimonies.<sup>44</sup> Although only

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Migrations: listening to and performing the in-between space,” *Liminalities* 10, no. 1 (May 2014), <http://liminalities.net/10-1/networked-migrations.html>.

<sup>42</sup> “INTIMAL Documentary 2021,” posted February 15, 2021, by Ximena Alarcón Díaz, Vimeo, <https://vimeo.com/512586450>.

<sup>43</sup> “Unravelling / Desenredando,” Ximena Alarcón Díaz, 2025, <https://www.ximenaalarcon.net/unravelling>.

<sup>44</sup> The testimonies were collected by the Commission of Truth, Memory and Reconciliation of Colombian Women in Diaspora, now called Diaspora Women. See Ximena Alarcón Díaz, Lucia Nikolaia Lopez Bojórquez, Olivier Lartillot, and Helga Flamtermesky, “From Collecting An Archive To Artistic Practice In The INTIMAL Project: Lessons Learned From Listening To A Colombian Migrant Women’s Oral History Archive,” *Acervo* 32 no. 3 (2019): 48–63.

representative of these women, the data revealed trends in walking, rotation, and breathing patterns, which Alarcón Díaz drew from as a foundation for INTIMAL. These findings later informed a telematic improvisation between London, Oslo, and Barcelona, made possible because of the adaptability afforded by mediated recorded sound. Software developed for the improvisation prototyped three modules for the INTIMAL system: MEMENTO pulled testimonies about migration from the oral archive, RESPIRO sonified breathing data from participants, and TRANSMISSION streamed audio between the locations.

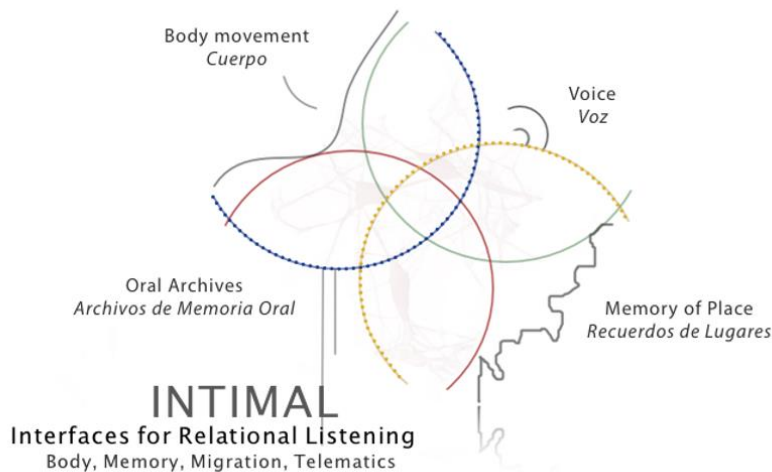


Figure 8. Visualization of the four INTIMAL components. (“INTIMAL App,” Ximena Alarcón-Díaz, 2023, <https://www.ximenaalarcon.net/intimal-project>.)

The telematic improvisation on May 7, 2019 involved nine Colombian migrant women, three in each location. They had previously spent a year “sharing dreams and listening to their migrations” together, and for the performance they responded to the oral histories of other diasporic women to create what Alarcón Díaz recounts as “a shared

dream.”<sup>45</sup> Through headphones, each performer listened to archives of diasporic women recounting often emotionally heavy stories of war and suffering. One participant explained her process of listening to everything (the archives, breathing, partners both in the space and telematically, and the audience) and waiting for her body to respond as it wanted.<sup>46</sup>

Recordings of the event showcase how the thirty-minute improvisation is sonically grounded with a consistent low- to mid-frequency whoosh droning through speakers.<sup>47</sup> The opening features forceful, static-like exhales. Over the first few minutes, the breathing sounds change in timbre, becoming wider and more spread to modify the texture. The drone also shifts in amplitude, getting louder and then softer as moments of sliding pitches with a gritty, brassy quality and additional short, higher-pitched flurries of instrumental tones are added. Then vocal interjections by the participants emerge, spoken in various languages, typically in a similar vocal range, and often repeating words with the same inflections. Such vocalizations remain prominent but vary in volume, rhythm, and duration. Breath sounds weave throughout, some are forcefully blown, and some on a short “hah” syllable; the breaths change between smooth, shaky, fuzzy, and sharp. The complex sonic textures wax and wane as phrases are repeated over the others singing and speaking, all interspersed with short moments of loud shouting. Participants imitate train

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<sup>45</sup> “Telematic Improvisation,” INTIMAL: Interfaces for Relational Listening, 2024, <https://intimal.net/stream>.

<sup>46</sup> Ximena Alarcón, “INTIMAL Long Distance Improvisation (Oslo, Barcelona, London).”

<sup>47</sup> “INTIMAL Long Distance Improvisation (Oslo, Barcelona, London),” streamed live May 7, 2019, by Ximena Alarcón, YouTube, <https://www.youtube.com/watch?v=m30yRwG1Tp8&t=2s>; “INTIMAL: A Long Distance Improvisation,” posted September 26, 2019, by Intimal, Vimeo, <https://vimeo.com/362640820>. Both videos appear together at INTIMAL, “Telematic Improvisation.”

announcements in beeps and sayings with exaggerated pitch changes. Vocally quiet moments are accompanied by the sounds of movement such as hands quickly crumpling crinkling paper, soft footsteps while walking or skipping, clothes rustling when crouching, and rhythmic steps while dancing.

In a climactic moment, all groups seem to laugh together, with pitches rising and falling in multiple layers, some cackling louder and more abrasive in timbre; and in many instances regular and repeated rhythms dominate the textures. During the laughter section, the drone becomes louder, punctuated by intermittent, reverberant metallic “hits” of sound. At one point, three participants sing a nursery rhyme in unison, staying within a narrow vocal range with a regular beat and repeated eighth-note rhythms. Some of the last sounds heard are intoning and singing over a now buzzy drone. The three performances end at slightly different times, perceived by different rounds of applause. As discussed in Chapter 3, the combination of drone and non-metered sonic events can evoke a sense of timelessness for listeners to focus on the “now,” which was also applicable for INTIMAL participants and audiences.<sup>48</sup>

As a listener, my sense of temporality was additionally influenced by hearing the sounds of another’s bodily rhythms, namely breathing, as louder and more irregular than my own. Moments of desynchronization between my own biological rhythms and those of the performers played through speakers across distance and time led to a sense of disconnect (or arrhythmia in Lefebvre’s terms) which prompted me to further consider feelings of displacement as expressed by the archival participants and migrant

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<sup>48</sup> See Kristina Leigh Knowles, “The Boundaries of Meter and the Subjective Experience of Time in Post-Tonal, Unmetered Music” (PhD diss., Northwestern University, 2016), 200, ProQuest (10160530).

performers; in contrast, moments of synchronicity or eurhythmia felt more meaningful.<sup>49</sup> Fittingly, in a Q&A following the performance, many participants used the word “resonance” when describing their experience and process, especially about feeling their sounds or movements supported by the other performers. Acoustic resonance occurs when vibrations from one sounding source match the natural frequencies of another, often causing amplification, and within the arts, resonance “emphasizes the situated existence of sound as a transformative encounter between bodies in a particular time and place.”<sup>50</sup> The preparation, process, and performance were rooted in empathetic and full-bodied listening, reflecting Deep Listening tenets.

### INTMAL App

INTIMAL’s next stage in 2020 applied findings from the initial research and improvisations to the development of a mobile-device app by programmer Kieran Harte. Though the app is not publicly available, Alarcón Díaz conducts workshops and presentations to bring it to communities, building collaboration into the experience. Alarcón Díaz describes the app interface as “an immersive walkabout telematic listening environment for tuning in while sensing place and presence through deep embodied sonic rituals.”<sup>51</sup> Spatial and environmental awareness are key. The app helps participants use their own bodies and voices in response to their movements (framed as migrations), much

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<sup>49</sup> Henri Lefebvre, *Rhythmanalysis: Space, Time, and Everyday Life*, trans. Stuart Elden and Gerald Moore (New York, NY: Continuum, 2004), 16, 67–68.

<sup>50</sup> Harry Burson, “Technologies of Communal Listening: Resonance at the Museum of Contemporary Art Chicago,” *Sounding Out!*, July 8, 2024, <https://soundstudiesblog.com/2024/07/08/technologies-of-communal-listening-resonance-at-the-museum-of-contemporary-art-chicago/>. See also Veit Erlmann, “Resonance,” in *Keywords in Sound*, ed. David Novak and Matt Sakakeeny (Durham, NC: Duke University Press, 2015), 175–182.

<sup>51</sup> “INTIMAL App,” Ximena Alarcón Díaz, <https://www.ximenaalarcon.net/intimal-project>.

like the modules of MEMENTO, RESPIRO, and TRANSMISSION used for the earlier telematic improvisation. Alarcón Díaz explains,

The app senses users' walking rhythms to be sonified and perceived as breathing. When used collectively, people can hear each others' walking patterns as "breathing", feeling embodied emotional telepresence. Within the journey the app reveals excerpts of stories of migration, that might trigger a response from the user, building the path with words and memories, as relations emerge and connect in an exercise of shared memories.<sup>52</sup>

To begin, participants equipped with a phone, the app, and headphones "tune in" by selecting the frequency at which they're vibrating (which is played back) and define North using the compass on their phone or other device. After setting up, users are guided to "walk in [their] own rhythm as if breathing."<sup>53</sup> The movement and direction determines which stories from migrant women are played, and participants can then record their own responses in real time. Each of these steps will be discussed in detail below.

One of Alarcón Díaz's goals with INTIMAL was working towards sonic and movement foci rather than purely visual screen-based interfaces. She says,

It's something about going back to listening ... listening to my body. So I started to detach from them [screen interfaces] ... because I'm tired of being seated here. I mean, my body's tired. And of course, as you lived with the Deep Listening course, this is something that facilitates and helps. And I play with technology, and at the same time I have suffered the fatigue. ... That was why I work with non-screen-based technologies. Because I wanted the body and movement.<sup>54</sup>

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<sup>52</sup> "INTIMAL App," Ximena Alarcón Díaz.

<sup>53</sup> "INTIMAL App," posted May 25, 2021, Ximena Alarcón, Vimeo, <https://vimeo.com/554809254>.

<sup>54</sup> Alarcón Díaz, interview by author.

In developing the app, she drew on her own walking and breathing rhythms during the COVID-19 pandemic, eventually choosing the material and sound of a sine wave in three possible frequencies to sonify walking patterns and relate to breathing.

In the INTIMAL app, participants can first choose to listen to a frequency of 174 Hz, 396 Hz, or 528 Hz to start. Research has shown that certain frequencies can reduce stress,<sup>55</sup> and 528 Hz in particular is touted as a healing tone that can increase conscious awareness for some.<sup>56</sup> In testing the INTIMAL app, Alarcón Díaz found that “people were very attached to the signal, to the frequency” they chose.<sup>57</sup> Listening through headphones, the chosen frequency of 174 Hz, 396 Hz, or 528 Hz defines the listener’s inner environment and body as part of the intended performance space. Notably, some participants also tied the frequency they chose to their outer environment, saying “When the tone stopped, I felt more connected to the sounds around me (such as birdsong); “I felt more aware of my environment this time, not only sounds but textures and colors”; and “another chose the 174 Hz frequency because of how it made her ‘feel calm and linked to the environment.’”<sup>58</sup> Starting the app experience by choosing a sound frequency helped participants focus on both internal and external environmental and spatial awareness, framing listening as a way of being in the world.

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<sup>55</sup> Priyanka John Jayaraj, Masitah Ghazali, and Abubaker Gaber, “Relax App: Designing Mobile Brain-Computer Interface App to Reduce Stress among Students,” *International Journal of Innovative Computing* 11, no. 2 (2021): 7–13. Also referred to as Solfeggio frequencies, these six frequencies are between 300 and 900 Hz, though the exact frequencies vary between sources.

<sup>56</sup> Horia Alexandru Modran, Tinashe Chamunorwa, Doru Ursuțiu, Cornel Samoilă, and Horia Hedeșiu, “Using Deep Learning to Recognize Therapeutic Effects of Music Based on Emotions,” *Sensors* 23, no. 2 (2023): 986.

<sup>57</sup> Alarcón Díaz, interview by author; Ximena Alarcón Díaz, “Sonic Proximities: Locating Oneself and the Others Within a ‘Migratory Journey’,” *Journal of Network Music and Arts* 4, no. 1 (2022): 7–8.

<sup>58</sup> Alarcón Díaz, “Sonic Proximities,” 7.

As in Deep Listening, breath serves as a cornerstone for INTIMAL; Alarcón Díaz frames breathing as an “emotional bridge for telepresence.”<sup>59</sup> In combination with movement (specifically walking), she positions breathing as a means to grow awareness of self and others, even across large distances.<sup>60</sup> This connection across space could build a sense of place and also conjure feelings of displacement as participants listen to and imagine the breath and words of others occupying different areas. Given INTIMAL’s foundational work with migrants, such feelings of displacement may be foregrounded. These emotions could then be processed by the breath and body. Alarcón Díaz asserts that breath is responsible for “social and environmental transformation,”<sup>61</sup> recognizing it as a powerful source, similar to breath’s function in meditation. Choosing breath as a prominent sound and activity in INTIMAL may also increase accessibility for those who do not or cannot walk or for those who walk with a different gait.

The link between breath and movement is important as it can help participants to better understand themselves, each other, and their surroundings, whether physical, imagined, or remembered. For the original Colombian women Alarcón Díaz worked with, listening to the impact of conflict and post-conflict in their migrations was essential, “bring[ing] together Colombians in a long process, listening to themselves, but also listening to voices who are talking about conflict.”<sup>62</sup> Research shows that breathing and

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<sup>59</sup> Ximena Alarcón Díaz, “INTIMAL App.”

<sup>60</sup> Alarcón Díaz, “Breathing (as Listening),” 250.

<sup>61</sup> Alarcón Díaz, “Breathing (as Listening),” 257.

<sup>62</sup> Alarcón Díaz, interview by author.

moving can help humans regulate their physiology;<sup>63</sup> by emphasizing bodily experiences, INTIMAL could aid participants in moving through emotions toward healing as well as reclaiming their bodies and memories. One app participant said that they let the stories guide their direction and movement.<sup>64</sup> Moving with others communicates a sense of solidarity and strengthening by not only listening but actively and physically engaging with their accounts. Because the narratives are so closely tied to participants' movements and rhythms, there is an element of trusting the knowledge and experience of others to guide them. Sounds, communicated through stories, directly influence participant movement. Participants retain agency as they choose when and how to engage with the narratives. Further, the archival stories and real-time responses use memory to connect timelines.

Because every human breathes, grounding the app experience in breath points to a broader connection across bodies that retains a physicality and rhythm of moving outside of walking. However, human relationships to breath are not universal. For instance, trauma survivors who have experienced respiratory emergencies, harm, or anxiety may find the focus on breath triggering or otherwise unhelpful. Basing INTIMAL on breath as medium and metaphor may not consider such experiences and therefore unintentionally present a barrier to some participants. While the app presumes certain levels of mobility, hearing, speaking, and wealth, future adaptations could account for other movement types and sensory exercises to increase accessibility.

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<sup>63</sup> Bessel van der Kolk, *The Body Keeps the Score: Brain, Mind, and Body in the Healing of Trauma* (New York, NY: Penguin Books, 2014), 38.

<sup>64</sup> "INTIMAL App," Ximena Alarcón Díaz, <https://www.ximenaalarcon.net/intimal-project>.

Alarcón Díaz recognizes the intertwined relationship between breath, movement, and voice (what she calls speech). She describes them as interrelated and is interested in how, together, they “can provide an embodied experience of remembering and transforming our sense of place and presence through people’s memory.”<sup>65</sup> Just as migration is connected to time, space, and identity, INTIMAL evokes time via memory, space via walking, and identity via voice. These same elements are found in Deep Listening exercises, such as Oliveros’s *Sonic Meditations*, where recalling, moving, and sounding expand awareness of inner and outer environments.

### Deep Listening and Environmental Elements

Deep Listening is present at each stage of INTIMAL, starting at the impetus with Oliveros’s invitation to listen deeply. Alarcón Díaz relied on Deep Listening exercises in early work with the migrant women, spending the first month working in dreams and telematics before doing a two-day in-person Deep Listening immersion with mentor Sharon Stewart.<sup>66</sup> Based on experience and research, Alarcón Díaz postulates that,

once you migrate my theory is that you will be always in this in-between space. And you need strategies to balance, to balance the sense of loss that you feel. And from my perspective, I do it creatively and sonically from what I know. ... And Deep Listening has been a way for that. So ... interfaces for relational listening, that’s INTIMAL. So how we can negotiate the feeling, ... feeling physically here and also the sense of presence or telepresence that is the place ... that is far from us. ... So it’s how to have this balance creatively, and not only alone, but with others ... That’s why I work with networks, too.<sup>67</sup>

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<sup>65</sup> Alarcón Díaz, “Breathing (as Listening),” 257–258.

<sup>66</sup> Alarcón Díaz, interview by author.

<sup>67</sup> Alarcón Díaz, interview by author.

Migration may create a space of constant in-betweenness, and Deep Listening welcomes such feelings and provides a way to negotiate them and create balance, particularly through the judgment-free dreaming modality as described by Ione. Deep Listening allows for modes of telepresence anchored in sound and body memories, elements reflected in INTIMAL. The goal of balance and potential healing is also shared between the two. Further, technology interfaces through the app can mimic “rituals of disconnection” like the migrant experience, which can be worked through with Deep Listening exercises.<sup>68</sup>

As an application of the Deep Listening practice, INTIMAL reveals underpinnings of environmental awareness. For example, INTIMAL participants improvised with the land and listened to their surrounding environments in developing the INTIMAL system, doing the *Sonic Meditation* “Environmental Dialogue”:

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.<sup>69</sup>

In this score, participants are instructed to fortify the more-than-human and human sounds they observe. They must venture outside of themselves to sonically support environments, and in this way the migrant women can become aware of the other beings in a potentially new place. To not only discover but recognize and then strengthen

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<sup>68</sup> Alarcón Díaz, interview by author.

<sup>69</sup> Pauline Oliveros, *Sonic Meditations: March–November 1971* (Baltimore, MD: Smith Publications, 1974), 2.

another's voice through one's own requires, on some level, a relationship and connection to the sound and perhaps, by extension, its source. Moreover, the directions call for both imagined and voiced reinforcement of a sound; to reinforce mentally employs imagined listening, while vocal or instrumental support inscribes an embodied practice, committing the sounding experience to bodily memory, to be recalled or reimagined in the future. This could be particularly meaningful for migrants who may already be in touch with their embodied memories of places.

The INTIMAL app draws on this concept of embodied memory with the oral histories of migrant women and by inviting participants to physically move in order to hear them. One participant commented on how listening to both the app and surrounding sounds together made them feel mindful, and another said that the app's "stimulation of sound ... brings that sense of belonging."<sup>70</sup> The reliance on and impact of sound as knowledge and identity ties to expanded listening and connection. As one participant noted, "listening to another woman's story amplifies a story within me."<sup>71</sup> Despite these meaningful reflections, however, participants do not have to directly confront the dynamics and systems that can cause migratory trauma. The mediated connection with the oral history archive risks cultivating an emotional response without providing mechanisms for accountability or aid. Perhaps group discussions after using the app could incite critical examination of harmful structures and offer direct ways to turn empathy into action.

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<sup>70</sup> Ximena Alarcón, "INTIMAL App," <https://vimeo.com/554809254>.

<sup>71</sup> Ximena Alarcón, "INTIMAL App": Alarcón Díaz, "Sonic Proximities," 6.

Environmental applications of the INTIMAL principles are also possible. A focus on spatial awareness is shared between migration experiences, INTIMAL, and Deep Listening. Becoming situated in a place could also incorporate sonic awareness, as some app participants noted increased connection to the sounds, rhythms, and space around them after listening to the app's opening frequency. As Alarcón Díaz describes it,

And with the INTIMAL app, you're tuning. I mean, you are connected with others ... And then you start to tune in with the birds, with the bus, with the voices of people who are there but you didn't realize. And then, when you disconnect [from the app], the disconnection is not that hard. Because people continue tuning. So it creates something in the memory, and it is the feeling that you were with others.<sup>72</sup>

INTIMAL strives to develop interactions, which might prompt participants to continue sensing and connecting with themselves and others in a space. As an extension of this heightened spatial and sonic awareness, participants might then listen to other instances of migration such as Feisst models across “geographically, ecologically and culturally diverse lands [that] show manifold inaudible temporal patterns - from the macro rhythms of historic events and climate change to the micro movements of dust particles.”<sup>73</sup>

### **“Dreaming with flowers while awake”**

Alarcón Díaz continues to develop the INTMAL system, for instance in the form of the surround-sound bilingual installation *Unravelling / Desenredando* (2023) created in collaboration with composer Ulf A. S. Holbrook.<sup>74</sup> The INTMAL app has also been

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<sup>72</sup> Alarcón Díaz, “Breathing (as Listening),” 250; Alarcón Díaz, interview by author.

<sup>73</sup> Sabine Feisst, “Hearing Borderland Temporalities: Sound Patterns of U.S.-Mexico Border Fortification,” in *Different Rhythms*, ed. Francesco Michi and Stefano Zorzanello (Giulianova, ITA: Galaad Edizioni, 2019), 42.

<sup>74</sup> “Unravelling / Desenredando,” Ximena Alarcón Díaz, 2024, <https://www.ximenaalarcon.net/unravelling>.

used in various settings: at the 2022 Earth Day festival,<sup>75</sup> as a Deep Listening exercise in “listening across perceived silences” of deafness and neurodiversity for the 2023 STRP Festival,<sup>76</sup> and in the 2024 workshop “Tuning in to Bristol and Addis Ababa” with recordings made at the environmentally conscious art institute Zoma.<sup>77</sup> Alarcón Díaz also co-created a collective of Latin American migrant women who continue to meet regularly online “to listen to and perform dreams and migratory journeys, expanding notions of femininity, territory and care.”<sup>78</sup> The collective created an online multimedia fanzine in 2019 about their experience,<sup>79</sup> met virtually to support each other during the COVID-19 lockdown, and continues to improvise together telematically with INTIMAL software.

Alarcón Díaz’s experience with INTIMAL also directly influenced her Deep Listening work. After suffering fatigue from screen-based projects and not having access to the same types of university resources as with her INTIMAL fellowship, she created the text score “Dreaming with flowers while awake” (fig. 9), without the need for recording or playback technologies, for *A Year of Deep Listening*.<sup>80</sup> The score incorporates the same environmental awareness with movement and breath rhythms that

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<sup>75</sup> “April 22: Earth Day Art Model Telematic Festival 2022,” INTIMAL: Interfaces for Relational Listening, April 19, 2022, <https://intimal.net/2022/04/19/april-22-earth-day-art-model-telematic-festival-2022>.

<sup>76</sup> “Tuning in with Silence(s) in Eindhoven, STRP 2023,” INTIMAL: Interfaces for Relational Listening, May 15, 2023, <https://intimal.net/2023/05/15/tuning-in-with-silences-in-eindhoven-strp-2023>.

<sup>77</sup> “Tuning in to Bristol and Addis Ababa,” Arnolfini Arts, 2024, <https://arnolfini.org.uk/whatson/tuningin>.

<sup>78</sup> “INTIMAL Collective,” INTIMAL, 2024, <https://intimalcollective.wordpress.com>.

<sup>79</sup> *INTIMAL: Multimedia Fanzine*, 2019, <https://www.yumpu.com/xx/document/read/62628419/intimal-fanzine-multimedia-vol-1-2019>.

<sup>80</sup> Alarcón Díaz also contributed the text score “Multisueño/Multidream” for Day 215 of *A Year of Deep Listening*.

were foundational to INTIMAL. As will be shown, she cultivates a dreamlike space by walking with sonic awareness, facilitating possible communication with the more-than-human world through flowers, and inviting dreams to function as migrations.<sup>81</sup> The title itself (“Dreaming with flowers while awake”) indicates a potential blurring between the dream of the reality and the reality of the dream, to use Ione’s phrasing.<sup>82</sup> Alarcón Díaz further explores the Deep Listening modalities of dreaming, moving, and listening in the piece.

**Dreaming with flowers while awake**

Go for a walk in an indoors or outdoors space if you can

Walk mindfully and breathe at  
The rhythm of your steps

Listen to the surroundings

Focus on a dream (unconscious) that comes to you  
Choose a kind listening flower

If you don't see it physically,  
imagine one

Tell her a part of your dream (with single words or  
sounds)

Listen in your bodymind for a response

Keep the experience in your heart

**Ximena Alarcón**


A Year of Deep Listening | Day 84 of 365 | The Center for Deep Listening 

Figure 9. Online version of score for “Dreaming with flowers while awake.” (Ximena Alarcón, “Dreaming with flowers while awake,” The Center for Deep Listening, 2022, <https://www.deeplisting.rpi.edu/2022/08/21/day-84-of-a-year-of-deep-listening>.)

<sup>81</sup> Alarcón, “Sonic Migrations.”

<sup>82</sup> Ione, *Listening in Dreams* (New York, NY: iUniverse, 2005), 8.

The one-page score contains short English instructions separated by line breaks rather than punctuation, implying seamless continuation between each prompt. The opening reflects inclusion by stating, “if you can” go for a walk, allowing for accessibility and various situations without assuming capabilities. Similar to Oliveros’s *Sonic Meditations*, “Dreaming with flowers while awake” uses breath to prepare the participant. The instruction to “Walk mindfully and breathe at / The rhythm of your steps” is broken into two lines, which brings visual attention to possible patterns and rhythms, mirroring an awareness of taking steps.<sup>83</sup> This further engages the body for multi-sensory listening.

As established in the development of INTIMAL, Alarcón Díaz ties breath with movement in these lines. While the INTIMAL app sonifies walking as breath for others to hear, “Dreaming with flowers while awake” guides the participant to hear their own walking patterns as breathing. Alarcón Díaz’s research revealed that breathing can “augment a sense of presence.”<sup>84</sup> This could cultivate an embodied emotional presence in the physical place plus telepresence in dream spaces or memories, intertwining the immediate surroundings and dreams mentioned in later instructions. Merging breathing and walking also centers the participant’s body as a site of knowledge and memory. The materiality of body and breath are highlighted and interrelated, which, along with voice,

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<sup>83</sup> This is akin to the visuals in some of John Cage’s writings. See, for example, John Cage, *Silence: Lectures and Writings* (Middletown, CT: Wesleyan University Press, 1961).

<sup>84</sup> Alarcón Díaz, “Breathing (as Listening),” abstract.

“can provide an embodied experience of remembering and transforming our sense of place and presence.”<sup>85</sup>

The language shift from “breathe at the rhythm of *your* steps” to the following line “listen to *the* surroundings” deliberately neutralizes any sense of ownership over the heard and experienced environments. Further, Alarcón Díaz’s research with breathing sensors in a Motion Capture lab revealed that breathing can highlight “moments of togetherness” when listening to others.<sup>86</sup> “Listen to the surroundings” could also enlist Deep Listening’s focal and global attention of inner and outer environments. I enacted this score outdoors in a residential grid-plan neighborhood of one-story brick homes on November 8, 2023 at 6:56am in Leander, Texas when it was cloudy and breezy, 68 degrees Fahrenheit, 88% humidity, and the pressure was 29.91 inHG. I mention these elements since they impact the listening experience.<sup>87</sup> Foregrounded was my quiet but present inner dialogue and my slightly audible, almost whistling inhales and exhales that aligned with every two steps. My feet swished quietly through the clover underfoot in a regular rhythm. In the background, soft but consistent, sustained waves of car traffic cut through the chain link fence separating the yard I was in and a relatively empty lot. Sharp, irregular, distant dog barks in a medium pitch range punctuated the soft rustling of leaves from the plentiful mature hackberry trees brushing against each other. These sounds contributed to the soundscape of the yard and helped me determine how I fit into it sonically.

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<sup>85</sup> Alarcón Díaz, “Breathing (as Listening),” 257–258.

<sup>86</sup> Alarcón Díaz, “Breathing (as Listening),” 250.

<sup>87</sup> Garth Paine and Celia Yang, *The Environmental Listening Field Guide* (Tempe, AZ: Arizona State University, Tempe, 2024), 23.

The next two lines of the score are visually coupled together: “Focus on a dream (unconscious) that comes to you / Choose a kind listening flower.” If a flowering plant can be seen physically, linking these actions of dreaming and choosing helps connect inner and outer awareness. The combined directions involve first growing awareness of all possible dreams and flowers, moving from global listening to focal attention on only one. Importantly, choosing a real flower for the score does not involve touching it. For many plants, touch alters growth patterns,<sup>88</sup> and avoiding that direct contact honors the plant and space. Choosing a flower could also draw on memories of gardens, celebrations, and/or loss, as flowers’ sensory attributes like color, smell, and shape stimulate emotions and autobiographical memories.<sup>89</sup> Alarcón Díaz’s directives merge Deep Listening with innate mind and body processes to inspire awareness of other beings. When realizing this score, I stopped walking at this point and found a specific common yellow wood sorrel with open petals but was still aware of my body from the opening instructions to walk mindfully. It reminded me of the ideas of Vietnamese Zen Buddhist monk Thích Nhất Hạnh in which he connects meditative awareness of our breath to observing a flower, acknowledging it as is, letting it be as is, and recognizing the complexity and history to fully see all that it is and has been.<sup>90</sup>

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<sup>88</sup> Janet Braam, “In Touch: Plant Responses to Mechanical Stimuli,” *New Phytologist* 165, no. 2 (2005): 382.

<sup>89</sup> Ephrat Huss, Kfir Bar Yosef, and Michele Zaccai, “Humans’ Relationship to Flowers as an Example of the Multiple Components of Embodied Aesthetics,” *Behavioral Sciences* 8, no. 3 (2018): 32; Artin Arshamian, Emilia Iannilli, Johannes C. Gerber, Johan Willander, Jonas Persson, Han-Seok Seo, Thomas Hummel, and Maria Larsson, “The Functional Neuroanatomy of Odor Evoked Autobiographical Memories Cued by Odors and Words,” *Neuropsychologia* 51, no. 1 (2013): 123–131.

<sup>90</sup> Thích Nhất Hạnh, *You Are Here: Discovering the Magic of the Present Moment*, ed. Melvin McLeod, trans. Sherab Chödzin Kohn (Boston, MA: Shambhala Publications, 2009), 3–4.

The descriptor of “kind” flower could be interpreted to indicate reception, appreciating that flowers and plants receive sonic vibrations to listen in their own way.<sup>91</sup> Yet, this signifier could also inadvertently guide participants to project human-like traits onto the chosen flower, thereby minimizing or flattening its complexities. Participants could assume all flowers are intrinsically kind and gentle, which does not account for harmful, toxic, or allergenic flowers or so-called “weeds,” plants deemed undesirable based on human perspective and context.<sup>92</sup> Similar to a weed’s contingent value, what is perceived as kind to one person may be harmful to another human or nonhuman species. Recognizing this for the score could invite listening to the flower as its own entity.

The next instruction is to tell the chosen flower about a dream fragment in single words or sounds. This may allow freedom from language and instead point to communication through vibrations. The sonic sharing evokes an act of embodiment, requiring an action to connect. Telling the flower “a part of your dream” also reflects the concept of dream fragments common in Ione’s explanation of dreams in *Deep Listening*. For me, it invited an improvisatory response without entrainment qualities, allowing full presence in the moment like meditation, and ultimately advanced a feeling of timelessness for contemplation. The sound I gave was a whooshing based on a portion of my dream from the night before. Knowing they will be heard and received by the flower (since they can detect sound) could also inspire participants to reflect on their own sonic ways of being.

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<sup>91</sup> See Monica Gagliano, “Green Symphonies: A Call for Studies on Acoustic Communication in Plants,” *Behavioral Ecology* 24, no. 4 (July 1, 2013): 789–796; Karen Bakker, *The Sounds of Life: How Digital Technology Is Bringing Us Closer to the Worlds of Animals and Plants* (Princeton, NJ: Princeton University Press, 2022).

<sup>92</sup> Nina Edwards, *Weeds* (London, ENG: Reaktion Books, 2015), 11, 205.

Interestingly, Alarcón Díaz changes the pronoun from “it” to “her” for the chosen flower (“If you don’t see *it* physically / imagine one / Tell *her* a part of your dream”).

When asked about this, she explained,

I’m coming from Spanish, which is also a gendered language. So *la tierra*, the earth, is female, the flowers [*la flor*] are female, too. ... And the “it” in English, referring to the more-than-human, I found it a bit distant. So I like to bring “it,” but also to bring it with a gender, which, by default, it matches my original relationship with it, with her. ... it’s kind of pushing into the female entity.<sup>93</sup>

She intended neutral language while also relating to an aspect of care. Though a general association exists across cultures of flowers with feminine attributes,<sup>94</sup> which may reduce flowers to a symbol of stereotypes and fit them within human constructs, the pronoun change could also be interpreted as an example of the boundary blurring prevalent in Deep Listening scores. Further, it may challenge the perception that plants are separate from humans, instead making a connection through shared language. Recognizing ourselves in flowers can point to the significance of being perceived and heard by each other. The piece encourages this feedback loop of recognition, highlighting that plants are perceived by and perceive humans.

The next instruction, “Listen in your bodymind for a response,” hints at the possibility of a conversation with both parties sending and receiving sounds. Though plants can and do emit sounds, they are typically out of the human hearing range,<sup>95</sup> so this

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<sup>93</sup> Alarcón Díaz, interview by author. The word “flower” is a feminine noun in other languages as well, like German, French, and Portuguese.

<sup>94</sup> Jacqueline Urakami, Ephrat Huss, Mitsue Nagamine, Johanna Czamanski-Cohen, and Michele Zaccai, “The Emotional Experience of Flowers: Zoomed In, Zoomed Out and Painted,” *Horticulturae* 8, no. 7 (2022): 668.

<sup>95</sup> Gagliano, “Green Symphonies,” 790; Sabine Feisst, “Sustaining Sonic Futures through Understanding Hidden Acoustic Ecologies,” in *Soundstainability: Making Future From Listening*, ed. Emiliano Battistini and Francesco Michi (Giulianova, ITA: Galaad Edizioni, 2025).

instruction relies on other ways of sensing. The directions also frame the flower as prominent and worth listening to. As radio producer Carlo Patrão posits, “meaningful experiences involving a multiplicity of senses can potentially engage emotional responses and concern towards plants [*sic*] life.”<sup>96</sup> Many plants may appear immobile compared to human movement, and a presumed association between movement and intelligence can contribute to perceptions of plants lacking knowledge.<sup>97</sup> Listening for a response from the flower combats this assumption and serves as a meditation on plants and their timescales. In realizing the score, I waited for a response from the common yellow wood sorrel, trying to stay receptive and honor its timing. I ultimately detected a sense of “I’m here” when a gentle breeze came through. The explicit prompt to listen appears twice (“Listen to the surroundings” and “Listen in your bodymind for a response”), increasing awareness of inner and outer environments while also connecting them.

The flower’s response could surprise participants and jar them out of a societal ignorance of plants, instead focusing attention on plant bodies, human bodies, and their interactions as both sounding beings and listeners. This is especially significant when realizing that plants “breathe, feel, and evaluate the world with their whole body.”<sup>98</sup> Centering plant bodies as receptive and responsive can challenge impressions of them as uncommunicative. Mirroring plants’ sensitivity by carefully listening meets them as they

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<sup>96</sup> Carlo Patrão, “Botanical Rhythms: A Field Guide to Plant Music,” *Sounding Out!*, February 26, 2018, <https://soundstudiesblog.com/?s=Botanical+Rhythms%3A+A+Field+Guide+to+Plant+Music>.

<sup>97</sup> Anthony Trewavas, “Aspects of Plant Intelligence,” *Annals of Botany* 92 (July 2003): 1; Michael Marder, “Plant Intentionality and the Phenomenological Framework of Plant Intelligence,” *Plant Signaling & Behavior* 7, no. 11 (November 2012): 1367.

<sup>98</sup> Devin Arne, “Plant Intelligence and Communication: Distributed, Non-Hierarchical Systems as Models for Music Composition and Networked Sound Installations” (DMA diss., Arizona State University, 2021), 90, ProQuest (28493938).

are, rather than demanding they change to be observed and cared for or about. Apparent stillness and quiet can be as powerful as gesture and loudness, as seen in dadirri and with Gold's movement scores, and Alarcón Díaz creates spaces to discover and explore this specifically through listening.

Such listening is done with the “bodymind.” The term reflects the mind/body connection at the heart of Deep Listening, called the “brain/body” by Oliveros.<sup>99</sup> Alarcón Díaz elaborates about the bodymind,

This is basically to bring together what has been the split, the split between body and mind ... I've been working in Deep Listening, and we understand its kind of bodymind. I mean, we understand that because [it's] the practice. ... And when I talk about Deep Listening body in an academic environment, they say, what do you mean exactly[?] ... Eventually I found an author called Sandra Reeve from the UK who talks about the nine ways of seeing a body. And that was very helpful, because she's a dancer and performer, and she comes from that background. ... Something that she proposes – the ecological body, actually – this is the ninth way. ... She talks about seeing, but I translate it in my mind as listening. ... So, all of these things is like implying the body has its own mind.<sup>100</sup>

Additionally, though not mentioned by Alarcón Díaz, “bodymind” has ties with disability studies, reflected in the work of Margaret Price and Eli Clare, and with meditation traditions.<sup>101</sup>

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<sup>99</sup> Pauline Oliveros, *Deep Listening: A Composer's Sound Practice* (New York, NY: iUniverse, 2005), 18–19.

<sup>100</sup> Alarcón Díaz, interview by author. See also Sandra Reeve, *Nine Ways of Seeing a Body* (Devon, ENG: Triarchy Press, 2011).

<sup>101</sup> Margaret Price, “The Bodymind Problem and the Possibilities of Pain,” *Hypatia* 30, no. 1 (2015): 268–284; Eli Clare, *Brilliant Imperfection: Grappling with Cure* (Durham, NC: Duke University Press, 2017); David Edward Shaner, *The Bodymind Experience in Japanese Buddhism: A Phenomenological Perspective of Kūkai and Dōgen* (Albany, NY: State University of New York Press, 1985). The term “mindbodyworld” is also found in language learning approaches: Dwight Atkinson, “Language Learning in Mindbodyworld: A Sociocognitive Approach to Second Language Acquisition,” *Language Teaching* 47, no. 4 (2014): 467–83.

The piece's title contains the plural form of flowers ("Dreaming with flowers while awake"), implying repetition of the score. If done again, remembering past experiences with the score and listening with the bodymind could inform how participants enact the first instruction to listen to surroundings. Plants also have memory and "can adjust their response based on prior experience,"<sup>102</sup> so a repeat with the same flower could draw on memory for both parties. The final prompt to "keep the experience in your heart" grants the connection an embodied place to reside. Alarcón Díaz suggests that such sensing place and experiencing presence with others leads to agency.<sup>103</sup> The focus on flowers specifically is well-suited to inspire care, as research shows that flowers elicit compassion, connection, helping, sympathy, understanding, and cooperation.<sup>104</sup> "Dreaming with flowers while awake" encourages increased attention to self in relation to the flower, with those relationships witnessed through sound and listening.

Plants are mentioned in over forty other *A Year of Deep Listening* scores.<sup>105</sup> Of those, almost forty percent are about trees, and two highlight flowers specifically

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<sup>102</sup> Arne, "Plant Intelligence and Communication," 93.

<sup>103</sup> Alarcón, "Sonic Migrations."

<sup>104</sup> Urakami et al., "The Emotional Experience of Flowers: Zoomed In, Zoomed Out and Painted," 668; J. Mojet, E. Köster, N. Holthuysen, R. Van Veggel, R. De Wijk, H. Schepers, and F. Vermeer, "The Emotional Influence of Flowers on Social Perception and Memory: An Exploratory Study," *Food Quality and Preference* 53 (2016): 150.

<sup>105</sup> "WitHnessing" by Hana Van Der Kolk; "From the Middle of a Clearing" by Holland Hopson; "Score for 'Deep Smelling'" by Allie E. S. Wist; "3 Rituals for Earth and Man" by Ina Otzko; "Memento Mori" by Tim Feeney; "Autumn Walk to an Improvised Performance" by Tim Bushnell; "Winter Walking" by Rachel Epp Buller; "Gê Morphé Lógos (For Objects In A Landscape)" by John Grzinich; "Love by Any Means" by Edie Emanuela Meidav; "Stone Mill" by Tim Feeney; "The Matter of Size" by Stacey Barelos; "Tree Rock Nebula" by Ben Richter; "Summer Solstice" by Michelle Girouard; "Night Singers (Text Score for Temperate Regions)" by Lisa Schonberg; "Crickets" by Nikki Krumweide; "Garden" by Ioanna Valsamara; "From 'Under\_Score: Circumstantial Scores'" by Frédéric Mathevet; "Tree Wisdom" by Lex Garcia; "Moving Interspecies Encounters" by Nina Sääskilähti; "Soundfield Memory Restoration Archive #3" by Anne Bourne; "Driftwood & Seastone" by Matt Hannafin; "Rock Practice/The Eroticism of Nothingness" by Hana J. Van Der Kolk; "Listen to the Wind" by Can Bilir; "Eleven" by Matthew Lee

(“Garden” by Ioanna Valsamara and “Listen with Your Eyes - Look with Your Nose - Smell with Your Ear” by Marie-Cécile Reber). Many of the scores refer to plants to describe a setting in which to perform the piece or as metaphor, like “From the Middle of a Clearing” by Holland Hopson, “Score for ‘Deep Smelling’” by Allie E. S. Wist, and “Anti-Anxiety Composition #1-3” by Michelle Nagai. Some invite participants to listen intentionally to plants, such as “Tree Wisdom” by Lex Garcia, “Chlorophyll Green” by Martha Riva Palacio Obón, and “No Small Matter (for Pauline Oliveros)” by Seth Cluett, others encourage listening as or otherwise emulating plants, as in “A Short Routine Towards Personal and Planetary Attunement and Growth” by Jon Petter, and still others use plants as sound sources, like “Love by Any Means” by Edie Emanuela Meidav and “Stone Mill” by Tim Feeney. These scores demonstrate a prevalent awareness of plants in Deep Listening works, though there is a range in level of engagement with and consideration of plant life.

In both “Dreaming with flowers while awake” and INTIMAL, Alarcón Díaz incorporates elements from the Deep Listening practice with her work tied to identity, migration, and storytelling. Though aspects like memory were present in her output before she started Deep Listening, the influence of the practice is clear in her reliance on and development of each modality as a framework for relational listening and balance.

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Knowles; “A Short Routine Towards Personal and Planetary Attunement and Growth” by Jon Petter; “Planting A Seed” by Shelley Burgon; “Sonic Habitat No. 22” by Akari Komura; “Chlorophyll Green” by Martha Riva Palacio Obón; “Scores for Listening #8” by Iris Garrelfs; “Future Soundscapes” by Scott Smallwood; “Vegetable Fists” by Sissj Bassani; “Listen with Your Eyes - Look with Your Nose - Smell with Your Ear” by Marie-Cécile Reber; “Grow and Stretch” by Parker Nelson; “Handy Listening” by Christof Zürn; “Embody Drawing” by Claire Paul; “Vowel Strings (O)” by Michael Peters; “No Small Matter (for Pauline Oliveros)” by Seth Cluett; “The Sound of Thoughts” by Thea Martin; “Tones to Meld and Heal Hardened Hearts” by Matthew Ariaratnam; “Germinate Trust Part I: Planting the Seeds” by Sady Sullivan and Lorelei Wagner; “Anti-Anxiety Composition #1-3” by Michelle Nagai.

Moreover, environmental awareness weaves throughout Alarcón Díaz's work by inviting connection with environments and engaging the more-than-human world. The readings presented here are significant for how they highlight all modalities and show environmental awareness in works by a prominent artist in the Deep Listening community.

One impact of Alarcón Díaz's work, especially evident in INTIMAL and "Dreaming with flowers while awake," is an increased recognition of the Deep Listening dream modality. Dreaming is often the most challenging modality to teach in Deep Listening, but Alarcón Díaz makes it accessible by pairing it with the more familiar element of memory. She also increases audience accessibility by presenting widely about Deep Listening and her research in various settings. For instance, the INTIMAL app continues to be used in workshops, at conferences, and with communities. "Dreaming with flowers while awake" has also been adapted for events, facilitating improvisation among groups of people. Alarcón Díaz's foundational philosophies about sound, inspired by Deep Listening, stay consistent in her artistic output and help heighten awareness of identity, migration, and memory.

### **Tina Mariane Krogh Madsen: Relating through Shared Movement**

Like Alarcón Díaz, Danish artist and curator Tina Mariane Krogh Madsen (abbreviated TMKM, b. 1977) is a certified Deep Listening facilitator and relies on Deep Listening as an artistic method. Madsen works in environmental, process, sound, and performance art, often with audio technologies. Interested in method over outcome, they problematize traditional expectations and definitions of bodies and sound, and they often

do preparatory fieldwork for their performances, engaging directly with environments through close bodily contact, as by laying on various geological formations. They offer interactive workshops open to the general public, as Alarcón Díaz does, and they also compose and perform electroacoustic music. For solo noise gigs, they prefer using low frequencies and building intense sonorities and textures, and they also collaborate with their partner, artist Malte Steiner, in the experimental industrial noise duo TMS and electronic live-coding group codepage.<sup>106</sup> As an artist-researcher, Madsen presents their work regularly at conferences, similar to both Alarcón Díaz and Kite. Madsen's work with rocks, such as *The Voices of Stones*, blends their interest in bodies, matter, temporality, and place, to be discussed in detail below.

Much of their work focuses on Nordic countries. They studied art education at the College of Arts, Crafts, and Design in Nørresundby and earned a Master of Arts in Art History from Aarhus University, both in Denmark. Denmark leads in sustainable green energy efforts and environmental protection and policy,<sup>107</sup> which may have inspired Madsen's creative development. They are currently a doctoral candidate at Aalto University School of Arts, Design, and Architecture in Finland.<sup>108</sup> Their research focuses on "environmental performance art and affective relations in a critical ethico-aesthetic

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<sup>106</sup> See "musicprojects," Block 4, 2024, <https://www.block4.com/musicprojects/index.php>.

<sup>107</sup> Benjamin K. Sovacool, "Energy Policymaking in Denmark: Implications for Global Energy Security and Sustainability," *Energy Policy* 61 (2013): 829–39; "Denmark," Sustainable Governance Indicators, Bertelsmann Stiftung 2022, [https://www.sgi-network.org/2022/Denmark/Environmental\\_Policies](https://www.sgi-network.org/2022/Denmark/Environmental_Policies); "Denmark is once again ranked the world's most sustainable," State of Green, June 1, 2022, <https://stateofgreen.com/en/news/denmark-ranked-worlds-most-sustainable/>. See also "The Sustainable Development Goals Report 2024," United Nations, June 28, 2024, <https://unstats.un.org/sdgs/report/2024/>.

<sup>108</sup> "About," TMKM, 2023, <https://tmkm.dk/about>.

practice,” indebted to the ideas of philosophers Gilles Deleuze and Felix Guattari.<sup>109</sup> Madsen’s research and artistic practice inform one another, concerned with new materialism, affect theory, and posthumanism,<sup>110</sup> and we will see how these ideas appear in their framing of sound as a vibrational process for relating to the more-than-human world.

### Early Listening Experiences

From a young age, Madsen cultivated an intimate awareness of sounds. Growing up by the sea, they recall how the ambiance of their small village soundscape was inspiring and relay that water sounds still help calm them.<sup>111</sup> As a child, they also intentionally engaged with entities in the more-than-human world. Being captivated by rocks and feeling kinship with them led to a lifelong, close relationship with stones.<sup>112</sup> Madsen was curious about rocks holding agency, knowledge, process, temporality, and relation, and they continue to explore these in their current work about geological listening to places.<sup>113</sup> Thus they follow a tradition of artists using stones in their work, like Cage (*Stones* print series, 1989), Christian Wolff (“Stones,” text score from *Prose Collection*, 1968–71), Oliveros (“Removing the Demon or Getting Your Rocks Off,”

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<sup>109</sup> “Team,” ECC - Performance Art, 2025, <https://ecc-performanceart.eu/about/team>. For example, see their course listing and syllabus for site-specific performance art: “Site-Specific Performance Art,” ECC - Performance Art, 2025, <https://ecc-performanceart.eu/sitespecificperformanceart>.

<sup>110</sup> See Tina Mariane Krogh Madsen, “A Liminal Body of Performative Becoming,” in *Taboo – Transgression – Transcendence in Art & Science 2020 Conference Proceedings*, ed. Dalila Honorato, Ingeborg Reichle, María Antonia González Valerio, and Andreas Giannakouloupoulos (Corfu, GRC: Ionian University Publications, 2022), 278–287.

<sup>111</sup> Tina Mariane Krogh Madsen, interview by author, October 7, 2024.

<sup>112</sup> “Artistic Research,” TMKM, 2020, <https://tmkm.dk/ArtisticResearch>.

<sup>113</sup> Madsen, interview by author.

1974, and *Rock Piece*, 1979), Tan Dun (*Earth Concerto for stone and ceramic percussion and orchestra*, 2009), and Pinuccio Sciola (pietre sonore/sounding stones sculptures, 1996–2016), as discussed in Chapter 2.

Madsen’s creative output focuses on performances, texts, and sound pieces centered on the body, gender, temporality, systems (through actions and narratives), and objects. They began exploring these components along with space and place as a field recordist around 2000. They explain,

But I didn’t have a recorder, really. So I did it with [a] video camera, and then just took the sound, because that was what I had at that time. All equipment was super expensive. And I just loved recording construction sites also. I started to make soundscapes for my videos, because I did a lot of video, like performance videos. And there I started cutting and just kind of learned myself how to do that. And then I started to kind of compose this stuff for this video work. And then, later on, I just took the consequence of actually doing sound for sound itself.<sup>114</sup>

Their use of video recording equipment heightened their existing sensitivity to sound, eventually leading to a focus on sound itself in their art. This component of their sonic journey is, in some ways, akin to Oliveros’s experience.

Movement through space often serves as a catalyst for Madsen’s recurring themes of bodies, temporalities, and systems. For example, the process-piece *Body Resonance* began with a performance in 2015 in which Madsen recorded the sounds of their body coming in contact with the walls and floors of an empty space at Hof Art Studio in Seyðisfjörður, Iceland.<sup>115</sup> They used a directional microphone and Sound Devices audio

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<sup>114</sup> Madsen, interview by author.

<sup>115</sup> Tina Mariane Krogh Madsen, “Body Resonance (action for installation),” SoundCloud audio, posted 2017, <https://soundcloud.com/tmkmadsen/body-resonance-action-for-installation>.

recorder to capture the natural resonance of the space.<sup>116</sup> The consequent eleven-minute mastered recording consists of slapping, thudding, popping, creaking, clapping, and dragging at various dynamics, as well as quiet moments between sonic events building listener anticipation of what will happen next. A naturally occurring reverberation for each sound reveals the hard surfaces of the empty space, and the loud volume of some actions makes one wonder about the physical toll on Madsen's body to achieve such intensity.

Madsen used the *Body Resonance* recording for a 2016 sound installation in the community-run space Liebig12 in Berlin and provided an accompanying booklet of transcribed performance actions.<sup>117</sup> The published transcription reveals that the sounds were produced by walking, jumping, rolling, bumping, slamming, squatting, kneeling, twirling, hitting, sliding, and holding. Audience members can elect to listen to the recording while simultaneously reading the action list; the challenge of following both necessitates concentration to concurrently listen to and imagine Madsen's movements. Imagination is also encouraged when listening to the recording alone or reading the transcript separately. Madsen explains that the work uses "sound as material," and they "[rethink] the no longer binary body as pure sound and movement."<sup>118</sup> Such elements remain constant in Madsen's work and are found in other *Body Resonance* iterations,

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<sup>116</sup> Tina Mariane Krogh Madsen, email to author, December 29, 2024.

<sup>117</sup> Tina Mariane Krogh Madsen, "Body Resonance," Performance Protocols, June 2017, [https://performance-protocols.net/Body\\_Resonance\\_publication.pdf](https://performance-protocols.net/Body_Resonance_publication.pdf).

<sup>118</sup> Tina Mariane Krogh Madsen, "A Distributed Body: Non-binary Becoming Through Sound," paper presented at Deleuze & Guattari Studies Camp and Conference, Prague, Czech Republic, July 6, 2021, <https://research.aalto.fi/en/activities/a-distributed-body-non-binary-becoming-through-sound>.

such as their interactions with stone formations, lava fields, and mountainous environments.<sup>119</sup>

In 2015 and 2017 Madsen undertook a curatorial research project based on Icelandic environments and environmental art. This led to the founding of Performance Protocols, “a nomadic platform for instruction-based art and collaborative processes,” with goals of refusing settling or definition and inviting experimentation.<sup>120</sup> Both online and offline formats are supported, and the website serves as the main connection point.<sup>121</sup> The online space houses instructions and scores, while the offline portion is for events and performances of such scores. Contributors include artists of sounds, visuals, and performances such as Þórunn Dögg Björnsdóttir, Ana Gutierrez, Claus Ejner, Anette Friedrich Johannessen, Ilya Noé, Aleks Slota, Sall Lam Toro, and Jane Rigler. Primarily text-based, Performance Protocols shows Madsen’s own reliance on text scores and similarities with those of Oliveros’s Deep Listening endeavors.

### Listening to Stones

In 2018, Madsen’s developed *kivi meditaatio* (*stone meditation*), a series of pieces involving stones. Madsen performed *kivi meditaatio # I* on June 2, 2018 at the Third Space gallery in Helsinki and *kivi meditaatio # II* on June 17, 2018 at Modular+ Space in Berlin.<sup>122</sup> Video documentation of these events shows Madsen sitting at a table of mixers

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<sup>119</sup> “Body Interfaces Research,” TMKM, 2016, <https://tmkm.dk/works/bodyinterfaces>.

<sup>120</sup> “Team,” ECC; “Curatorial Projects,” TMKM, 2019, <https://tmkm.dk/curatorial>; “performance | [paer-‘for’-mans] protocols | [proe-to-‘koels’],” Performance Protocols, 2019–2020, <https://performance-protocols.net>.

<sup>121</sup> See “performance | [paer-‘for’-mans] protocols | [proe-to-‘koels’].”

<sup>122</sup> Tina Mariane Krogh Madsen, “kivi meditaatio # I,” performance, June 2, 2018, posted June 14, 2018, by Tina Madsen, YouTube, <https://www.youtube.com/watch?v=Hpw3TP1niZc>; Tina Mariane Krogh

and pedals as faint road noise from outside the space is heard. Next to Madsen rests a small metal sheet with contact microphones. During performances, Madsen picks up and releases three rocks onto the sheet. The resulting sounds are then broadcast through speakers with various effects like loops, delay, and distortion. The twenty-minute *kivi meditaatio # I* in a small room with dry acoustics starts with regular rhythmic repetitions of the stone-to-metal impact while in the background Madsen slowly builds and then decreases an ambient drone derived from the rocks' sounds. These two elements of rhythmic repetitions and static-like drone change in volume and timbre and provide the basis for the piece. Dropping the stones on a metal sheet may not immediately display the kinship Madsen strives for, given that the stones were displaced and are a habitat for microorganisms and other living beings, though it is worth noting that Madsen has involved their own body in similar actions, as for the previously mentioned impact-based piece *Body Resonance*.

The twenty-two-minute *kivi meditaatio # II* recording was performed in a larger, more resonant space than that of Helsinki's Third Space, and the beginning stone drops reverberate at a slower rate and lower pitch. The reverb is less groove-like, and the underlying drones are more present than in *kivi meditaatio # I*. Madsen also diversifies how they engage with the stones, sometimes turning them over instead of dropping them, which could be viewed as exploratory attention to the stones. An audio recording from the nineteen-minute performance of *kivi meditaatio # III* at the Akusmata gallery in Helsinki on June 4, 2022 reveals more subtlety in the use of sounds and their effects, and

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Madsen, "kivi meditaatio # II," performance, June 17, 2018, posted September 30, 2018, by Tina Madsen, YouTube, <https://www.youtube.com/watch?app=desktop&v=UVrU7fyNwV0>.

the acoustics feel slightly dampened in relation to the first two performances.<sup>123</sup> Still, this performance again manifests Madsen's awareness of and sensitivity to stone sounds.

These meditations display aspects commonly found in Madsen's work, as in *The Voices of Stones*. Madsen uses contact microphones to pick up resonances that are then processed through effects pedal(s), mixer, and interface. Like many electroacoustic musicians, Madsen often uses contact microphones, building them themselves and constantly "doing impossible things with [them], meaning things that you're not supposed to use them for."<sup>124</sup> In this regard, they build on earlier examples like Cage's *Cartridge Music* (1960), Karlheinz Stockhausen's *Mikrophonie I* (1964), David Tudor's *Rainforest IV* (1973), and Richard Lerman's *Travelon Gamelon* (1977). Parallels between the *kivi meditaatio* series and *The Voices of Stones* are also the result of Madsen being a processual artist and relating various works to each other, following a tradition set by composers like Richard Wagner, Gustav Mahler, and Charles Ives. Madsen expounds:

I always see that there are states ... states of things that [happen] at certain times, and they might be performances or presentations. But then there is always some [part] of that that continues and flows into other things ... And then they become new things, new starting moments, their own thing.<sup>125</sup>

### Influence of Deep Listening

Experimentation remains an important part of Madsen's work. They create scores for most of their pieces. Some serve primarily as a testing ground for ideas, while others become publications. They credit Oliveros as an inspiration and, through their study of

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<sup>123</sup> Tina Mariane Krogh Madsen, "kivi meditaatio # III, live at Akusmata," SoundCloud audio, posted 2022, <https://soundcloud.com/tmkmadsen/kivi-meditatio-ii-a-part-of-governing-bodies-helsinki-performed-live-at-akusmata-04062022>.

<sup>124</sup> Madsen, interview by author.

<sup>125</sup> Madsen, interview by author.

her text scores, discovered Deep Listening as a practice. In 2017, Madsen attended a Deep Listening workshop at the Errant Sound gallery in Berlin led by Alarcón Díaz,<sup>126</sup> and it was there that they learned about the Center for Deep Listening’s training program.<sup>127</sup> Soon after, Madsen completed the Deep Listening Intensive I (2019) and Intensive II (2020), earning their Deep Listening certification.

The Deep Listening training was incredibly significant for Madsen. They had been practicing inclusive attunement and listening since childhood, but Deep Listening provided a language and method for their art. They reflect, “I use it every time in all my work,” and writing scores in the tradition of Oliveros helps as they engage with their body and sites for fieldwork.<sup>128</sup> The works they produced in 2020 during and directly after the Deep Listening certification training further reflect this, as will be discussed in the next sections about *The Voices of Stones* and “[sound-stones].”

## *The Voices of Stones*

### Background

Madsen incorporates all three Deep Listening modalities in their work with the more-than-human world, especially through relating bodies. This is highlighted in their project *The Voices of Stones* (2020). The piece was part of their early doctoral research and was influenced by their Deep Listening certification training. For this piece, Madsen worked with stones, first in the field and later in performance. Based in new materialist

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<sup>126</sup> “Affective Listening workshop,” Errant Sound, April 2017, <https://errantsound.net/2017/04/affective-listening-workshop>.

<sup>127</sup> Tina Mariane Krogh Madsen, email to author, October 7, 2024.

<sup>128</sup> Madsen, interview by author.

theories of nonhuman agency, Madsen references political theorist Jane Bennett's idea of "thing-power" to describe how they came to know, relate to, and collaborate with stones for these performances.<sup>129</sup> They explain,

The artist moves with the stones, activates and relates to them, responds to their sounds and let[s] them give sound. Action and response are creating a feedback-loop of mutual dependence as well as it activates the surroundings, its surfaces, and acoustics.<sup>130</sup>

Including rocks as active participants in their art grew from their lifelong interest in stones and was also present in their foundational 2015 Body Interfaces project.<sup>131</sup>

Body Interfaces is Madsen's concept rooted in site-specific body-focused performance. Partially derived from architect Branden Hookway's "interface" as the relationship between humans and various technology<sup>132</sup> and Deleuze and Guattari's process of exploring potentials through continuous and dynamic becoming via "a body without organs,"<sup>133</sup> Madsen's notion of bodily interfaces is "a relational space between two entities, concerning the aspects of bringing together two parts, as well as separating them, being a threshold condition for the two."<sup>134</sup> Body Interfaces as a research

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<sup>129</sup> Tina Mariane Krogh Madsen, "The Voices of Stones Narrations," paper presented at the Viral Life Symposium (virtual), November 17, 2020, <https://virallife.vitenparken.no/symposium>. See also Jane Bennett, *Vibrant Matter: A Political Ecology of Things* (Durham, NC: Duke University Press, 2010).

<sup>130</sup> "Artistic Research," TMKM.

<sup>131</sup> "Artistic Research," TMKM.

<sup>132</sup> Branden Hookway, *Interface* (Cambridge, MA: MIT Press, 2014). Madsen also mentions the influence of embodied information aesthetics by Anna Munster, plus post-human and new materialist philosophies by Rosi Braidotti, Jane Bennett, and Karen Barad. See Madsen, "A Liminal Body of Performative Becoming)," 278–287.

<sup>133</sup> Gilles Deleuze and Félix Guattari, *Anti-Oedipus: Capitalism and Schizophrenia*, trans. Robert Hurley, Mark Seem, and Helen R. Lane (Minneapolis, MN: University of Minnesota Press, 1983); Gilles Deleuze and Félix Guattari, *A Thousand Plateaus: Capitalism and Schizophrenia*, trans. Brian Massumi (Minneapolis, MN: University of Minnesota Press, 1987).

<sup>134</sup> "Body Interfaces Research," TMKM.

methodology intentionally positions the entire human body as an interface. In other words, the human body acts as the main means to intimately connect with environmental features, typically in unconventional ways like crawling or sliding. Madsen marks an artist residency in Fljóstunga, Iceland as a return to such a physical and embodied practice, and they have used their own body, including their face, to explore the “rough geology” of rock formations, concrete, stones, ice, lava stone, and hay.<sup>135</sup> Creating the *Body Interfaces Script*, similar to a score, further allowed Madsen to develop vocabulary to describe the interface experiences and regard them “as an open source performance instruction, changed through its liminal existence between various bodies and agents in interaction” (fig. 10).

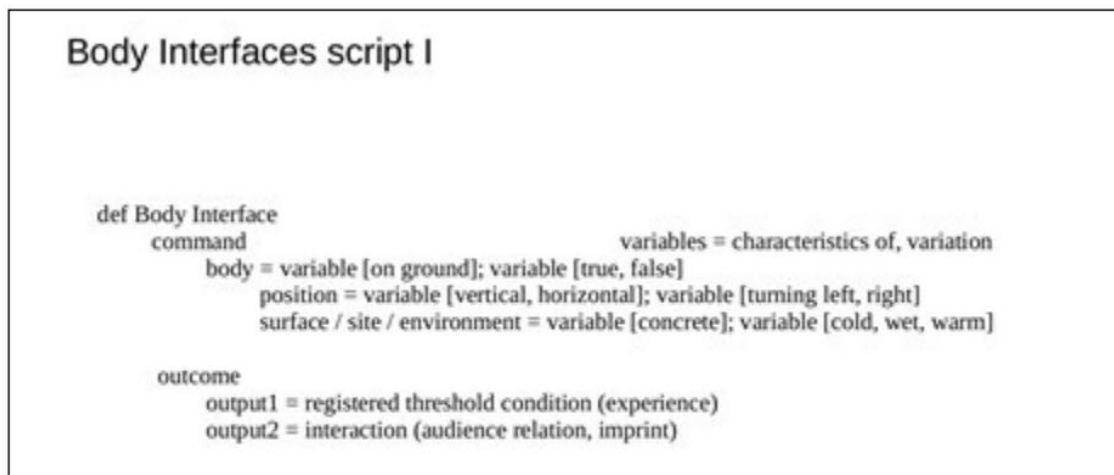


Figure 10. *Body Interfaces Script I* showing the vocabulary and structure Madsen developed to describe interface experiences. (Tina Mariane Krogh Madsen, “A Liminal Body of Performative Becoming,” in *Taboo – Transgression – Transcendence in Art & Science 2020 Conference Proceedings*, ed. Dalila Honorato, Ingeborg Reichle, María Antonia González Valerio, and Andreas Giannakouloupolos (Ionian University Publications, 2022), 286.)

<sup>135</sup> See Madsen, “A Liminal Body of Performative Becoming,” 281; Tina Mariane Krogh Madsen, “Body Interface Research: Fljóstunga Artist Residency,” April 30–May 14, 2015, [https://issuu.com/fljotstungaresidency/docs/fljotstunga\\_tina\\_mk\\_madsen/4?e=20781206/32790424](https://issuu.com/fljotstungaresidency/docs/fljotstunga_tina_mk_madsen/4?e=20781206/32790424); “Body Interfaces Research,” TMKM.

Notably, Madsen reflected about their Fljóstunga residency, “It happened more than once that the surroundings called for immediate interaction.”<sup>136</sup> At times, this meant stopping spontaneously in an unplanned area to interface with it and letting the land or any formations dictate how they moved through the space; such listening and relating to environments is engrained in Body Interfaces. Though Body Interfaces was developed before Madsen’s Deep Listening certification training, this type of heightened environmental awareness reveals a sensitivity likewise found in Deep Listening endeavors. The same promotion of the more-than-human world is present in *The Voices of Stones*. Madsen elaborates that interfacing is a location-specific concept and, notably, frames such work as listening beyond the sonic, “where the intensity of the encounter replaces that of volume.”<sup>137</sup> This demonstrates expansive listening outside of traditional Western musical parameters as a way to connect with “silent” or “inaudible” entities.

Ten stone collaborators are central to *The Voices of Stones* (fig. 11). They came from areas Madsen visited surrounding Helsinki between August and October 2020. Though the stones were temporarily removed, they were later returned to where they were found, countering a purely extractive practice.<sup>138</sup> Seven stones are from the Suomenlinna fortress, a heritage site of islands in the Baltic Sea.<sup>139</sup> Local rock in the area, such as that used to build the fortress, includes granite, granitic gneiss, schist, and

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<sup>136</sup> Madsen, “Body Interface Research: Fljóstunga Artist Residency.”

<sup>137</sup> Tina Mariane Krogh Madsen, “Kropsresonans (Danish, body-resonance),” in *A Sound Word Almanac*, ed. Bernd Herzogenrath (New York, NY: Bloomsbury Academic, 2024), 36; Madsen, “The Voices of Stones Narrations.”

<sup>138</sup> Madsen, interview by author.

<sup>139</sup> Of the other rocks, two are from the island of Mustikkamaa, and one is from the city of Espoo.

rapakivi granite.<sup>140</sup> Coloring, patterns, and strength can differ between and within these rock types. For example, igneous granite's speckled appearance and strength are the result of a slow cooling process that crystallizes minerals, and granite's durability is well-suited for Finland's "temperate climate zone with cold humid winters characterized by multiple freezing and thawing cycles per year."<sup>141</sup> Gneiss, a metamorphic rock, displays bands of colors created by heat and pressure. Schist also has layering, though this metamorphic rock is not as strong. Rapakivi granite is distinguishable by its large, oval graining. Many of Madsen's stone collaborators appear to fit these common categories, as seen through reddish and brownish coloring, layers of distinct banding, and crystallization patterns. Each stone visually showcases its long histories, and an "archival force' is not only unleashed in the material history it contains, but also through the stories it is interspersed with."<sup>142</sup>

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<sup>140</sup> "Fortress of Suomenlinna," UNESCO World Heritage Center, 2024, <https://whc.unesco.org/en/list/583/>; Tuija Lind, "Finland: Helsinki and Suomenlinna," *Archaeological Journal (London)* 162, no. sup1 (2005): 23; "The Old Mines and Quarries of Helsinki Metropolitan Area," *International Journal of Rock Mechanics and Mining Sciences & Geomechanics Abstracts* 32, no. 5 (1995): A244; Nike Maria Luodes, Elena G. Panova, and Rossana Bellopede, "Characterization of Natural Stone Material Used in the Nordic Eastern Urban and Coastal Environment," *Environmental Earth Sciences* 76, no. 8 (2017): 3; Elena G. Panova, Dmitri Y. Vlasov, and Hannu Luodes, eds., "Evaluation of the Durability of Granite in Architectural Monuments," *Geological Survey of Finland: Report of Investigation 214* (2014): 7.

<sup>141</sup> Panova et al., "Evaluation of the Durability of Granite in Architectural Monuments," 75.

<sup>142</sup> Stefanie Heine, "Litho-morphosis: Encounters beyond the Human," in *Nina Nowak: Meet me at the Beach*, ed. Nina Nowak, (2022), 104, [https://curis.ku.dk/ws/portalfiles/portal/344535104/Heine\\_Litho\\_morphosis.pdf](https://curis.ku.dk/ws/portalfiles/portal/344535104/Heine_Litho_morphosis.pdf).



Figure 11. Madsen’s stone collaborators for *The Voices of Stones*. (Tina MK Madsen, Facebook post, October 14, 2020, <https://www.facebook.com/photo/?fbid=10157394445617483&set=a.391631822482.>)

In the spirit of process philosophy, Madsen’s descriptions of the stones honor their current forms while recognizing both their origins from larger geological formations and their complex microbiomes. However, categorizing the rock bodies as “ten stones” could also be read as an anthropocentric grouping of the more-than-human world and harken to historical scientific practices of classification designed to measure and control humans, species, and objects. Such categorization could inadvertently prioritize separation from the land over relation with it.

In contrast, many Indigenous perspectives frame stones as enmeshed with their environments. For example, stones are significant in the culture of nearby Indigenous peoples in areas of northern Finland, Norway, Sweden and northwest Russia. Also called Sápmi, these are ancestral lands of the Indigenous Sámi people. In Sámi culture, stones

were used for early writing systems and remain key to many sieiddit or sacred sites, showing how “all human action is intrinsically entwined with the environment ... all of which are knowing and acting subjects, co-constituting each other.”<sup>143</sup> Because Madsen and Sámi traditions do share similar philosophies about more-than-human agency, it would be interesting for Madsen to acknowledge or otherwise engage with this cultural practice in future projects.

In *The Voices of Stones*, the stones’ variety of sizes, shapes, and textures impacts how they sound. For example, Madsen describes that the long, dark granite stone has sharp edges that result in a clear, crisp tonal quality when tapped; another from the coastal side of Suomenlinna is flat and sharp with a delicate structure, having been shaped by the sea water and producing a hollow sound, while a cracked granite stone from Mustikkamaa has thin edges and sounds like porcelain when scraped.<sup>144</sup> By engaging with the stones in this way, Madsen’s goal is to help them be heard. Where the stones come from is vital to understanding them, and Madsen says, “I am in this process actively relating to the histories of the places they were found, the environment they were – and are – a part of.”<sup>145</sup> Recognizing humanity in relation with (rather than opposition

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<sup>143</sup> Sanna Valkonen, Áile Aikio, Saara Alakorva, and Sigga-Marja Magga, eds., *The Sámi World* (New York, NY: Routledge, 2022), 6, 415. See also Veli-Pekka Lehtola, *The Sami People: Traditions in Transition*, trans. Linna Weber Muller-Wille (Fairbanks, AK: University of Alaska Press, 2004); Anna-Kaisa Salmi, Tiina Äikäs, and Sanna Lipkin, “Animating Rituals at Sámi Sacred Sites in Northern Finland,” *Journal of Social Archaeology* 11, no. 2 (2011): 212–35.

<sup>144</sup> Madsen, “The Voices of Stones Narrations.”

<sup>145</sup> Madsen, “The Voices of Stones Narrations.”

to) the more-than-human world might lead to a heightened ecological consciousness for Madsen and audiences.<sup>146</sup>

Madsen emphasizes that the stones have to want to be a part of the project,<sup>147</sup> endeavoring to grant them a voice as collaborators and preventing removal exclusively for human use. The question does arise, however, as to the limits to human perception of stone or other more-than-human agency. Though difficult to describe, Madsen listened to their connection with the participating stones, recounting, “They appeared to me, and had some sort of connection to me which I always listened to, and it also became the reason for their participation in the work. I tried to find a relation to their own movements/sounding when performing as well.”<sup>148</sup> While still largely dependent on human perception, discerning this connection comes from Madsen’s established practice of exploring relation and proximity with stones and a sentiment of kinship.

Kinship can be “a feeling of being close or similar to other people or things.”<sup>149</sup> This relational quality connects with geographer Kathryn Yusoff’s interest in inhuman geographies, which Madsen references. Yusoff discusses the treatment of the earth as kin, specifically through relationships with rocks; she writes about “having a rock in the family” as a way to queer forms of kinship or relationality with the more-than-human

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<sup>146</sup> Kathryn Yusoff, “Geologic Subjects: Nonhuman Origins, Geomorphic Aesthetics and the Art of Becoming Inhuman,” *Cultural Geographies* 22, no. 3 (2015): 402.

<sup>147</sup> Madsen, “The Voices of Stones Narrations.”

<sup>148</sup> Madsen, email to author, December 29, 2024.

<sup>149</sup> *Cambridge English Dictionary*, “kinship,” 2024, <https://dictionary.cambridge.org/us/dictionary/english/kinship>.

world that is historically shaped by extractive white heteropatriarchy.<sup>150</sup> This type of kinship is manifest in Madsen’s work through their practice of listening deeply to stones. Yusoff furthermore argues that “[t]he potential of the earth as an archive and a journey fellow in struggles of resistance is to activate shared social and racialized histories against a history of the ‘inhuman,’ where rocks instruct on stories of erasure, if not the erased and forgotten.”<sup>151</sup> Madsen brings attention to similar ideas of silenced bodies in their work like *The Voices of Stones*.

Each of the Deep Listening modalities is present in the early stages of *The Voices of Stones*. The movement modality is important to the process, as Madsen’s physical movement to and within the locations permitted them to find the stones, and their careful observations reflect a slowing of their human movement and rhythms in response to noticing the geological pacing of the stones. They also learned about the stones’ structures and sounds by physically interacting with them, as by tapping to produce a clear note or lifting to identify the weight. In this way, the rocks’ materiality conveys their histories. The listening modality is showcased by Madsen’s account of the stones’ sounds with words like hollow, clear, pitched, crisp, round, percussive, and squeaks.<sup>152</sup> The dream modality aids Madsen in envisioning the history of the rocks and places. Dreaming or imagination could arguably be at play for the consent aspect given by the stones as well. Overall, Deep Listening provides a framework for expanding Madsen’s

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<sup>150</sup> Kathryn Yusoff, *Geologic Life: Inhuman Intimacies and the Geophysics of Race* (Durham, NC: Duke University Press, 2024), 502.

<sup>151</sup> Yusoff, *Geologic Life*, 298.

<sup>152</sup> Madsen, “The Voices of Stones Narrations.”

sonic awareness by listening to the environments, the stones, and their own body, which allows them to engage with the stones in a thoughtful and intentional manner.

### In Performance

Madsen was invited to perform *The Voices of Stones* with the stone collaborators on October 15, 2020 at the Kiasma Museum of Contemporary Art in Helsinki as part of the Sounds Like Performance\_Now event. Madsen often performs in public places and displays work in artist-run spaces, so the offer to perform in an institutional gallery like this benefitted their career in ways not applicable to the stones. Relocating the stones into such a space raises concerns about commodification. While the act of moving the rocks is not problematic in and of itself, the shift into a human system of art could flatten the stones' individualities and environmental embeddedness into an aesthetic symbol for audiences. Other species, like ravens, also remove rocks for tools and play, but they remain immersed in their local environments. Extraction for human use often unfolds on a larger scale, and it is this system that Madsen's piece brushes against. Perhaps other iterations of the work could take place at Suomenlinna and Mustikkamaa without removal as a way to further respect the stones, their histories, and their relation to place.

Photo and video documentation of the thirty-five-minute performance show the stones set on both metal and fabric, with Madsen moving between and with them (fig. 12). 30-millimeter contact microphones are placed or clamped on metal sheets, then connected to delay, reverb, and looper pedals and a mixer. Madsen constantly adjusts levels throughout the performance, and the sounds are played through two Genelec speakers mounted on the ceiling near two corners of the room. The speaker positioning could contribute to an enveloping sound experience. The stones and Madsen interact with

the hard floor as much as with the metal and fabric, and the floor and wall textures also contribute to more reverberation in the space, enhancing the effects Madsen uses.

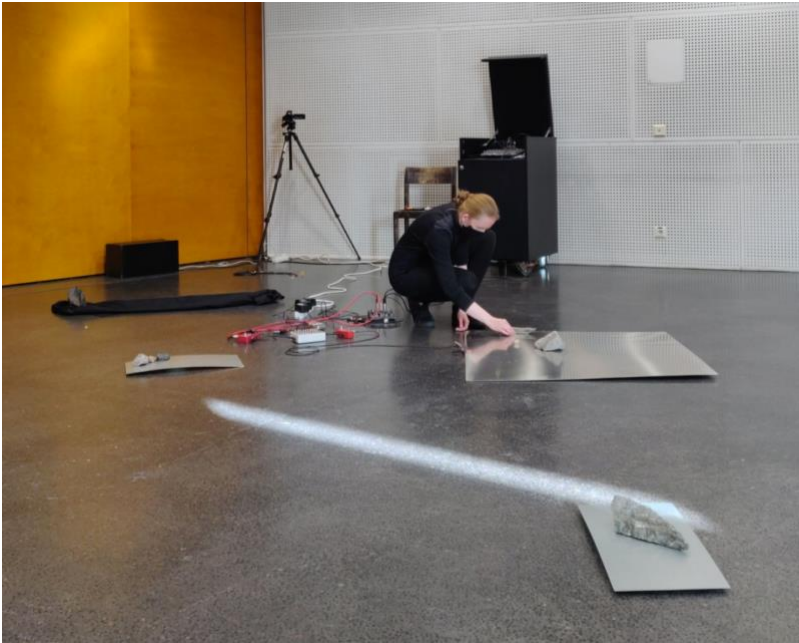


Figure 12. Madsen performing *The Voices of Stones* at Kiasma Museum of Contemporary Art on October 15, 2020. (“Artistic Research,” TMKM, 2024, <https://tmkm.dk/ArtisticResearch>.)

The performance begins quietly without amplification. Madsen picks up smaller stones, moving them between their palms before letting them go onto one of the metal sheets without microphones, punctuating the quiet sonic environment with short, dry, percussive landings. This process harkens back to the *kivi meditaatio* (*stone meditation*) series, though the scale for both the rocks and space is larger. However, the focus for *The Voices of Stones* is on sliding rather than dropping; Madsen moves the stones along the perimeter of the metal with their palm and back of their hand, next doing the same with the larger stone on the sheet. The sounds drawn from the small stones are extremely quiet, and those from the larger stone are scrapes with a low, sustained whooshing as a thinner gritty sound emerges from the texture for a few seconds. This is an effective start

since the soft volume of the smallest stones' sounds requests attentive listening from the audience, sonically introducing Madsen and the rocks and preparing the audience for the more amplified sounds to come.

Madsen then moves themselves and the smaller stones physically across the space while rubbing the stones together to provide a sonic transition. The delicate tinkling and popping of the stones touching each other is easier to hear now than when they were pushed around the small metal sheet. Next, they are gently rolled on another piece of metal, though this sheet is larger and attached to contact microphones and pedals, resulting in louder and more layered sounds. Madsen then drags and pushes the stones in extreme gestures, physically and sonically growing their presence in the space and layering sounds upon each other. The pedals amplify, reverberate, and loop the stone sounds scraping across metal, creating a low, thunder-like quality, with gliding, higher frequencies perceptible over the repeated rumbling. Madsen gradually fades the volume in and out with the pedal controls.

The rumble changes when Madsen moves the contact mic by its cord, which they made long to accommodate movement through the space.<sup>153</sup> The resulting sound is louder, clearer, and sharper with irregular rhythms as the hanging mic is first dragged along the floor and then over the largest stone, which remains stationary sitting on a piece of black cotton fabric. Abandoning the contact mic, Madsen then wraps and cradles the large stone in the fabric, using the material to flip over and slide the stone. The stone's resonant knocking against the fabric and floor is heard without amplification. At times, the fabric pushes the contact mic cord so it scrapes the floor with loud, grating sounds.

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<sup>153</sup> Madsen, email to author, December 29, 2024.

Later, the mic is attached to a smaller metal sheet on which the stone is rocked, resulting in high-pitched but mellow feedback and loud clanking sounds, which Madsen loops. They also bend the metal sheet to layer more jangling over the looped sounds, which turn raucous before a long decrescendo. After another section of unamplified yet loud scraping and sliding, Madsen slides their body across the floor, creating short bursts of fuzzy sounds. Eventually, most of the stones are placed on the largest metal sheet, which Madsen wobbles, shakes, lifts, sits on, and stretches their body across, eventually returning to low, consistent, rumbling sounds punctuated by reverberant thudding. The performance ends with a return to the hollow-sounding sliding of stones before Madsen lays the metal sheet flat and the volume fades.

The reverb, delay, and loop effects remain prominent throughout, inciting a drone-like, meditative quality. The pacing between gestures and sonic events feels unhurried. Attuning to slower rock timescales may bring audience attention to how, in contrast, exploitative, fast-paced capitalist efforts alter more-than-human rhythms. Slow-paced timing combined with the echo-like rumblings from the effects pedals allows for the stones to be heard longer and multiple times. Listeners can learn about the stones by observing their changing sounds. Madsen chose effects pedals with a clearer tone than what they would normally use in noise-gig setups in order to bring out the rocks' sounds.<sup>154</sup> They embrace the microphones as mediators providing a way to hear interactions with and movements of themselves and the stones. Because this performance happened in 2020, COVID protocols restricted audience numbers and movement, but Madsen noticed that

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<sup>154</sup> Madsen, interview by author.

those I talked [with] after found it that it was quite intense and very much had that kind of dynamics that I wanted it to have. Because for me it's very important to keep an intensity intact in this amount of time that I ... perform. That's also why I always perform in these kind of rather short [timespans] when I do sound because I like to have it very precise ... and keep the intention.<sup>155</sup>

### Deep Listening and Environmental Elements

Interpreted through Deep Listening's movement modality, Madsen's physicality serves to connect humans and stones and establish kinship in various ways. Sliding is the key movement they share. Both Madsen and the stones change positions and orientations to each other via sliding. In many cases, Madsen themselves must slide their body – on their arms or knees, crouching, or laying down – in order to slide the stones, emphasizing the similarities in their movements. It is through the sound of this sliding that the audience becomes acquainted with the participants, and listeners can hear the relationships between bodies, referring back to the phenomenological idea that one sound is actually the result of two or more things interacting. Further, the full-body sliding movement enlists Deep Listening's movement modality, drawing attention to a way of engaging with others and space outside of societal norms.

However, the setting reveals limits to this performance. Without knowing about Madsen's kinship with and careful listening to stones, the collaboration could be seen as purely performative. For example, the stones are only heard via amplification and as the result of Madsen's movements of and around them, and the shared sliding motion would not occur on this timescale without their human intervention. The presence of the stones remains important, but their reliance on Madsen could indicate their role to make meaning for humans, not for themselves. In many ways, the audience listens sonically

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<sup>155</sup> Madsen, interview by author.

and visually not to the stone voices, but to Madsen's listening of the stones. This could unsettle human relationships with stones, but it also exposes the challenges when doing so in a gallery space. In contrast, Madsen's outdoor Body Interfaces exchanges are effective as examples of humans listening to stones where rock formations directly control and push Madsen's body in uncommon and uncomfortable ways.

Though the title and description of *The Voices of Stones* focus on rocks, listening to the metal sheets and place itself further informed Madsen's movements. They specifically requested a large metal sheet from the gallery for this performance because they wanted to test the risk of audio feedback from more drastic movements. They recall,

I do that thing where I kind of lean the body down because I wanted that kind of swish, which is also a risky thing to do because of feedback .... I love playing that kind of space of feedback. But it was a big room, and the speakers were not close, so that was not a problem. I've been places where I had to move around a bit in sound check because everything wanted to howl ... But I kind of find that space interesting, like when you negotiate with the space. ... So I went there and tested the sheet and ... how the acoustics were working.<sup>156</sup>

They ran a sound check before the performance and found that the room's large size accommodated the setup and movement of materials. The soundcheck also allowed them to navigate the space and familiarize themselves with the acoustics and the audio equipment provided by the gallery, such as a subwoofer to accommodate their preference for low frequencies.<sup>157</sup> Through this, the metal sheets act as resonators, helping the stones and movements be audible. Despite the metal's importance as a sonic translator for human perception, it is not highlighted to the same degree as the stones. Interestingly, the metal for this type of sheet is often mined from rock ore. Therefore, the voices of the ten

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<sup>156</sup> Madsen, interview by author.

<sup>157</sup> Madsen, interview by author.

featured stones are filtered through extractive practices and indicate an absence of the stones discarded in the sheet-making process. Hinting at these missing voices of stones could allow for expansive listening and lead to heightened sonic awareness.

Madsen frames *The Voices of Stones* as an interaction between artist and stones, with action and response in a feedback loop of dependence,<sup>158</sup> similar to how Alarcón Díaz's INTIMAL app incentivizes and responds to participant movement. Madsen identifies the transfer of energy and impulses as how the stones' "body-resonance" or "kropsresonans" relates to them, the space, and the audience.<sup>159</sup> They thoughtfully center the stones at the collection, performance, and closing stages. Bodies are important as Madsen navigates the boundaries of agency between themselves and the rocks, in some cases starting an action and in others reacting to what they perceive as the stone's prompting through movement. Although it is impossible to know a stone's thoughts or comprehend its experience and timescale, "knowing that the undertaking of such an action is most likely impossible ... still opens doors to a different understanding."<sup>160</sup> Madsen embraces the muddled nature of this relationship where bodies consistently listen and respond, and, in this way, reflects the boundary-blurring present in Deep Listening scores between inner and outer environments and participant roles. Through listening and movement, each participant can inform the others, similar to the equality aspect in many Deep Listening exercises. For example, in the gathering stage, Madsen listened for consent from the stones, seemingly through a sense of feeling that they have cultivated

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<sup>158</sup> "Artistic Research," TMKM.

<sup>159</sup> Madsen, "Kropsresonans (Danish, body-resonance)," 36.

<sup>160</sup> Heine, "Litho-morphosis," 107.

throughout their life. Although this type of listening to stones remains human-centered and influenced by human perception, it can guide Madsen in understanding how they are entangled with them.

Considering their works as ongoing also aligns with their conceptualization of geological processes as continued dialogue to explore their kinship with stones. In the gathering process and performance, Madsen mirrored what they asked of the stones by relocating, listening, communicating, sliding, and withstanding impact. Madsen tests limits and proximities with their stone collaborators, informed by Deep Listening. Intentional listening may also center a rock's memories outside of human time (called "inhuman memory" by Yusoff) and therefore grant perspective and point to different possible futures and trajectories.<sup>161</sup> In *The Voices of Stones*, Madsen relies on Deep Listening as a means to hear geological history – a history that is often forgotten or fractured – and approach stones outside of their mining use to humans.

Despite granite's structural strength, the stones may break down or otherwise experience wear in the performance process, which could impact both harmful and protective microbes on the stone surfaces.<sup>162</sup> This also provides the opportunity for generative decay, or processes of redistribution. Erosion and the rock cycle are examples of generative decay "complexly linked to the exposure and instrumentalization of racialized, gendered, disabled, and other bodies" as possible sites for harm, but also as

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<sup>161</sup> Yusoff, *Geologic Life*, 35.

<sup>162</sup> Tejaswini Petkar, "Stone Surface Biofilms: The Good, the Bad and the In Between," *American Society for Microbiology*, November 18, 2022, <https://asm.org/articles/2022/november/stone-surface-biofilms-the-good,-the-bad-and-the-i>.

resistance, transformation, and relationality.<sup>163</sup> Both stone and human bodies can break down or transform (though typically on different time scales) because of or in relationship with their environments while still maintaining vibrancy. Resistance, as another example, can be understood as a way of interacting with the world and other forces; for the rocks, this could be withstanding erosion or making human use difficult, and for humans this could be challenging societal expectations or, in Madsen's case, working against definition as an artist. Additionally, listening is the means through which Madsen and observers can detect Bennett's thing-power, or vitality, and transfer energy. I hear *The Voices of Stones* as a site fertile with generative possibilities for relationships, reading the potential decomposition of stone and human as a process not dependent on growth for existence.<sup>164</sup>

In *The Voices of Stones*, Madsen strives to exhibit relationality, and they provide an example of conscious interaction with the more-than-human world sonically and physically. Although the event announcement did not mention the stones' past or geological qualities, and it is unclear if Madsen introduced the audience to them, attendees could see and hear Madsen's direct engagement with the stones through shared sliding gestures. This underlines the concept Madsen calls mutual dependence, resulting from a dynamic balance between human and more-than-human communities.<sup>165</sup>

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<sup>163</sup> Audra Mitchell, "Generative Decay: Toward a Politics of and for Earth," *International Relations (London)* 38, no. 3 (2024): 440.

<sup>164</sup> Kristina Lyons, "Decomposition As Life Politics: Soils, Selva, And Small Farmers Under The Gun Of The U.S.-Colombian War On Drugs," *Cultural Anthropology* 31, no. 1 (2016): 59.

<sup>165</sup> Carolyn Merchant, *Reinventing Eden: The Fate of Nature in Western Culture*, 2nd ed. (New York, NY: Routledge, 2013), 193.

## “[sound-stones]”

One of Madsen’s later projects was *The Metabolism of the Earth* (2023), an exhibition at XM3 in Aalborg that framed natural processes as dialogues and featured performances, scores, an artist talk, and local listening sessions in Aalborg and Nørresundby.<sup>166</sup> Tied to this is *The Composite Geology of Place* (2023), a text score in both Danish and English that explores “how to listen to the geology and the lithic environment around,” specifically in a post-industrial landscape.<sup>167</sup> The thirty-two-page booklet gives instructions for embodied and imaginative listening as a means of engaging with geological formations and weather. Similarly, an instruction poster for their installation *[proximity] sensing in, sensing out* (2024) at Oksasenkatu 11 in Helsinki guides visitors to “discover different surfaces around the lithic / slide (into) the sound(s) via your actions,”<sup>168</sup> which harkens back to the sliding Madsen did with their body and rocks in *The Voices of Stones*.

Madsen recognizes Deep Listening’s strong influence on how they approach these creative activities and develop their research process.<sup>169</sup> For example, they led Deep Listening and lithic listening sessions as part of *[proximity] sensing in, sensing out*. They are also involved in the Deep Listening community. Like Alarcón Díaz, Madsen

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<sup>166</sup> “Tina Mariane Krogh Madsen, Jordens Stofskifte,” XM3, April 24, 2023, 2024 <https://xm3.gallery/tina-mariane-krogh-madsen-jordens-stofskifte>.

<sup>167</sup> Madsen, interview by author.

<sup>168</sup> Malte Steiner, “Our exhibitions are open today 12:00 - 18:00,” Facebook post, September 20, 2024, <https://www.facebook.com/photo/?fbid=27072104005714262&set=a.101438353207526>; “Tina Mariane Krogh Madsen [proximity] sensing in, sensing out,” Oksasenkatu 11, 2024, <https://oksasenkatu11.fi/tina-mariane-krogh-madsen>.

<sup>169</sup> Madsen, interview by author.

contributed text scores to *A Year of Deep Listening*: “[sound-stones]” and “Let the Wind Rinse Your Ears.” “[sound-stones]” (fig. 13) highlights how Madsen approaches work with stones in a Deep Listening-specific setting. Because *A Year of Deep Listening* is a tribute to Oliveros, Madsen purposefully made “a very Oliveros-y kind of score,” drawing inspiration from their study of her other text scores.<sup>170</sup> Madsen wrote “[sound-stones]” in March 2020 during a residency in Reykjavík as part of their work *Listening Scores [Reykjavík]* (2021).<sup>171</sup>

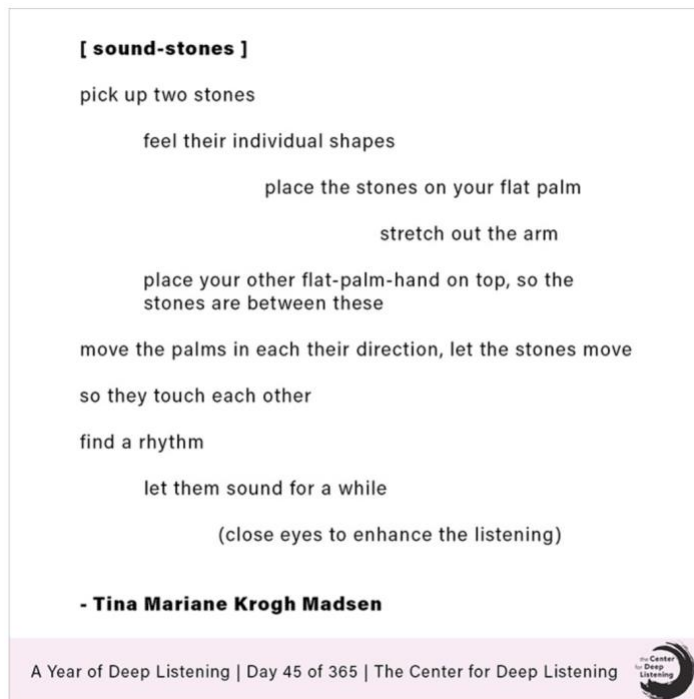


Figure 13. Online version of score for “[sound-stones].” (Tina Mariane Krogh Madsen, “[sound-stones],” The Center for Deep Listening, 2022, <https://www.deeplisting.rpi.edu/2022/07/13/day-45-of-a-year-of-deep-listening/>.)<sup>172</sup>

<sup>170</sup> Madsen, interview by author.

<sup>171</sup> Tina Mariane Krogh Madsen, “[sound-stones],” The Center for Deep Listening, 2022, <https://www.deeplisting.rpi.edu/2022/07/13/day-45-of-a-year-of-deep-listening/>. See Tina Mariane Krogh Madsen, *Listening Scores [Reykjavík]* (performance protocols, 2021).

<sup>172</sup> The book publication includes a small edit to “flat palm-hand”; Madsen, email to author, October 7, 2024.

The “[sound-stones]” score places lines of text without capitalization or much punctuation intentionally across the page. This is a departure from their other scores which are often aligned left, right, or centered. Visually, the text acts partly as a graphic score, enhancing the written instructions and inviting a pause between each line, somewhat like Alarcón Díaz’s text score with a similarity to Cage’s writing. The first instruction is to “pick up two stones.” Knowing Madsen’s process of selecting stones in *The Voices of Stones* and lithic listening in other works, this direction could carry the weight of intentionality in the chooser and consent by the stones. However, such a clear directive is absent here, meaning participants might rely on extractive practices or otherwise impose control without accountability. It is possible the stones chosen could be close to the human participant, for example as part of an existing rock or crystal collection, or located in the nearby surroundings. If rocks do not seem immediately available in a place, it could encourage participants to reconsider their definition and forms of stone, carefully explore their environment, or become familiar with new settings.

The participant is also invited to engage with the stones through tactile senses via the second instruction to “feel their individual shapes.” The next two directions to “place the stones on your flat palm” and “stretch out the arm” enhance the bodily connection as the text visually mimics the outstretching motion. Important here, touch can be intimate and facilitate the perception of sound, allowing co-existence “with the embodied other, to participate with that other body in its movements.”<sup>173</sup> By focusing on the hand, Madsen

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<sup>173</sup> Kym Maclaren, “Touching Matters: Embodiments of Intimacy,” *Emotion, Space and Society* 13 (2014): 100.

encourages a more accessible physical connection than their full-body contact in *The Voices of Stones* while still centering the body as a way to relate to others. Attention is between the palms, concentrated on the human and stone interactions. Significantly, Oliveros outlines a similar exercise with “Energy Sphere” in *Deep Listening: A Composer’s Sound Practice* where focus is also brought between the palms to detect energy as a way of listening.<sup>174</sup>

Madsen’s instruction to move the palms and “let the stones move so they touch each other” encourages listening to their encounters and potential vibrations and rhythms through the hands. Holding the rocks could also invite participants to contemplate their endurance, temporality, and experience.<sup>175</sup> Madsen’s next directions to “find a rhythm” and “let them [the stones] sound for a while” encourage attentive presence rather than forcing handling of the stones. The found rhythm could be sonic, embodied, or visual as different temporalities are represented by the stones. To humans, stone timescales may be perceived as extremely slow. Since “listening to rhythms activate[s] motor areas of the brain” and “movement changes perception of, and brain responses to, rhythms,”<sup>176</sup> experiencing the stones’ rhythms through palm movement may heighten the difference between human and stone timescales. Moving and listening are key for this awareness of stones. The instruction to “let them sound for a while” further opens the amount of time

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<sup>174</sup> Oliveros, *Deep Listening: A Composer’s Sound Practice*, 9.

<sup>175</sup> See Elizabeth A. Povinelli, Mathew Coleman, and Kathryn Yusoff, “An Interview with Elizabeth Povinelli: Geontopower, Biopolitics and the Anthropocene,” *Theory, Culture & Society* 34, no. 2–3 (2017): 169–185.

<sup>176</sup> Richard Ashley and Renee Timmers, eds., *The Routledge Companion to Music Cognition* (New York, NY: Routledge, 2017), 65.

that can be spent listening, and participants may lose their sense of clock time with this step.<sup>177</sup>

I have enacted the score several times, including in Leander, Texas on April 8, 2024 around 3:30pm after a solar eclipse when the temperature outside was 84 degrees Fahrenheit with 88% humidity and 29.7 inHG pressure. The two chosen stones came from the yard of my home. One was a small, jagged, lightweight horticultural black lava rock presumably left by the previous owner, and the other was a larger, heavier, smooth, flat, orange limestone rock native to the area. There were many possible stones, but those two presented themselves as the best choices. Specifically, their textures stood out. After picking up the stones, I moved inside where the temperature was slightly cooler at 78 degrees. The acoustics changed as I stepped indoors since the blank walls, tall ceiling, and tile floors created slight reverberation. I observed the stones visually and tactilely, focusing on one at a time. In feeling their shapes, I discovered that the lava rock's indentations helped it fit well in my hand. When moving the stones in between my palms, typically the limestone remained stationary while the lava rock shifted. The prominent rhythms I observed were felt physically due to the stones' textures. The sonic quality was likewise driven by textures sliding, grating, crunching, scraping, rocking, and wobbling against each other. This resulted in short, soft, high pitches as the lava stone rocked against the limestone. I could hear the rhythmic sonic intricacies within the context of the surrounding soundscape, which featured low, distant appliance hums, a ticking clock, and the faint whirl of traffic sounds; my and the rocks' rhythms felt slow in comparison.

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<sup>177</sup> Maja Marijan, "The Perception and Organization of Time in Music," *Accelerando: Belgrade Journal of Music and Dance* 3, no. 3 (2018).

During a different outdoor enactment of the piece around 11:00am on March 16, 2025, when it was 63 degrees Fahrenheit with 31% humidity in Leander, another participant chose stones that looked alike and found that the movement helped them focus on the present moment while also thinking about the rocks' histories. They commented on how the volume of the stones they held matched and blended with other surrounding sounds. From my perspective, the sound from their stones was louder than those I held, so it was easier to sonically focus on them. However, the temperature and textures of the rocks I held still served to ground me in the space and feel physically connected to the rocks and their rhythms.

The reliance on stone rhythms calls to mind Oliveros's "Removing the Demon or Getting Your Rocks Off" from the *Sonic Meditations* (1974) and *Rock Piece* (1979), both of which require resonant rocks for participants to strike together. There are similarities in the focus on stone sounds and pulses, and participants are invited to listen to environmental sounds in relation to their rock rhythms in all pieces. However, the rocks in Oliveros's pieces are mainly instruments, whereas Madsen's approach frames the stones as collaborators and directly focuses on their contribution. In this way, Madsen pays homage to Deep Listening while pushing the practice and applications further.

Eighteen other scores from *A Year of Deep Listening* specifically mention rocks, stones, or pebbles.<sup>178</sup> While some use the rocks as instruments – like "River Rocks" by

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<sup>178</sup> Stephanie Loveless, ed., *A Year of Deep Listening: 365 Text Scores for Pauline Oliveros* (Newark, NJ: Terra Nova Press, 2025). See "Stone Mill" by Tim Feeney; "Rituals For Earth And Man" by Ina Otzko; "The Matter Of Size" by Stacey Barelos; "Tree Rock Nebula" by Ben Richter; "Music For Seven Rocks And A Mason Jar" by Yifend Yvonne Yuan; "Listen Like A Stone" by Iris Chun-Tzu Chang; "Stones/Water/Time/Breath" by Dean Rosenthal; "Elemental Junctures" by Suzanne Thorpe; "The Dispatch" by Candice Hopkins and Raven Chacon; "Instruction For Non-Human Listening No. 12" by Louise Mackenzie; "Water, Wood, Stone, Breath" by Grace Harper; "Handy Listening" by Christof Zürn; "WitHnessing" by Hana Van Der Kolk; "Gê Morphé Lógos (For Objects In A Landscape)" by John

Holland Hopson, “Water, wood, stone, breath” by Grace Harper, and “Stones/Water/Time/Breath” by Dean Rosenthal – others center on stone bodies for listening and relating, as in “gê morphé lógos (for objects in a landscape)” by John Grzinich, “WitHnessing” by Hana van der Kolk, and “Handy listening” by Christof Zürn. Still others invite becoming like stones, namely “rock practice/the eroticism of nothingness” by Hana van der Kolk, “Elemental Junctures” by Suzanne Thorpe, and “Listen like a stone” by Iris Chun-Tzu Chang. Large-scale rocks also appear as in “THE DISPATCH” by Candice Hopkins and Raven Chacon, which features a photograph of Church Rock in the Navajo Nation and outlines protocols for Indigenous land protection and activism. These examples show a range of listening and relating to others, including stones, as a theme throughout *A Year of Deep Listening*, also evident by the thematic groupings in the 2025 publication, including scores for listening with surroundings, across species, and with land.<sup>179</sup>

Madsen’s “[sound-stones]” encompasses elements of Deep Listening by listening through the body, specifically the palms, made evident by the direction to “(close eyes to enhance the listening).” The dreaming modality is present as imaginative qualities possibly informing the process of choosing stones and letting them “sound for a while.” Compared to *The Voices of Stones*, “[sound-stones]” is less demanding on the performer’s body and technical setup and, in that way, is more accessible to the Deep Listening community at large, though it does assume a certain level of physical mobility

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Grzinich; “Driftwood & Seastone” by Matt Hannafin; “Rock Practice/The Eroticism Of Nothingness” by Hana Van Der Kolk; “River Rocks” by Holland Hopson; “Soundfield Memory Restoration Archive #3” by Anne Bourne.

<sup>179</sup> Loveless, *A Year of Deep Listening*.

and strength. And while the ambiguity of instructions is in line with other Deep Listening scores, an unintended consequence could be an implied passivity of stones without environmental context and less intentionality from human participants while interacting with stones. Both pieces, however, feature the more-than-human world through stones and relate their bodies to human bodies through movement and sound.

The possibility for a partnership ethic is present in “[sound-stones]” where “nature is an active subject, not a passive object”<sup>180</sup> through the inclusion of stones. By physically embracing rocks and moving with and listening to them, Madsen creates a space where they might be collaborators if approached outside of an extractive mindset. Through simultaneous touching and being touched, “we find an intimacy that consists in becoming oneself through the other.”<sup>181</sup> Such accessibility situates Madsen’s work with the more-than-human world in the Deep Listening community’s growing body of creative endeavors and also shows how Deep Listening philosophies impacted Madsen.

### **Kite: Indigenous Listening to the Unknown**

Known artistically as Kite, Suzanne Kite (b. 1990) does not utilize Deep Listening but follows a listening practice informed by distinct Indigenous philosophies for her creative output. She comments, “I ground my practice in a Lakǰóta philosophy, which articulates a clear relationship between the body and knowledge-making, one that has led

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<sup>180</sup> Merchant, *Reinventing Eden*, 185.

<sup>181</sup> Maclaren, “Touching Matters: Embodiments of Intimacy,” 101.

me to a listening-based, performance-centered artistic practice.”<sup>182</sup> She is a multimedia artist, and her scholarship, exhibitions, and performances involve the more-than-human world, sometimes encountered in dreams. She is also an assistant professor of American and Indigenous Studies and director of the Wihanble S’a Center for Indigenous AI at Bard College. Collaboration is key for her, also true for many Deep Listening artists, and she works with musicians, scholars, family, dreams, stones, AI technology, and more. She co-founded the label Unheard Records with Mint Park, intended as a place for under-represented electronic sound artists,<sup>183</sup> and developed a workshop with multidisciplinary artist Alisha B. Wormsley for collective dreaming and healing for people of color.<sup>184</sup> Her work, such as *Wógligleya (Thunǰášila Čečiyelo)*, to be discussed in more detail, provides an example of listening and dreaming specifically grounded in Lakǰóta ethics.

The Lakǰóta consist of seven bands, including the Oglála located in southwest South Dakota on the Pine Ridge Reservation, previously called the Oglala Sioux Tribe.<sup>185</sup> In Lakǰóta culture, metaphors and descriptions are often based in observations of environments,<sup>186</sup> with ceremonial life inspired by visions.<sup>187</sup> Singing and dancing are

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<sup>182</sup> Suzanne Kite, “Academic CV,” 2022, <https://static1.squarespace.com/static/641c9e79560ce0068fb84a8c/t/644919b0c173a91718487ca6/1682512304955/Academic-CV-2022.pdf>.

<sup>183</sup> Unheard Records, 2024, <https://unheardrecords.org>.

<sup>184</sup> Alisha B. Wormsley and Kite, “An Invitation for Black and Indigenous Artists to Dream,” *c mag*, August 15, 2021, <https://cmagazine.com/articles/an-invitation-for-black-and-indigenous-artists-to-dream>; Alisha Wormsley and Suzanne Kite, “Shaping the Past: Reflections on Dreaming and Black and Indigenous Futures,” artist talk, October 21, 2020, posted November 11, 2020, by Goethe-Institut Montreal, YouTube, [https://www.youtube.com/watch?v=ObF\\_8GFjv14](https://www.youtube.com/watch?v=ObF_8GFjv14).

<sup>185</sup> “Oglala Sioux Tribe,” South Dakota Department of Tribal Relations, 2024, <https://sdtribalrelations.sd.gov/tribes/Oglala-Sioux-Tribe.aspx>.

<sup>186</sup> “Understanding the Issue,” Lakota Language Consortium, 2021, <https://lakhota.org/understanding-the-issue>.

inseparable as they combine the body, voice, mind, and heart in balance, according to singer Severt Young Bear.<sup>188</sup> The more-than-human world and objects can (but do not have to) hold animacy and agency, which impacts how Lakhóta people engage with them. For example, some are familiar with the story that Lakhóta songs originally came from prairie chickens.<sup>189</sup> In short, an old man was sick and went to the Black Hills to die, but by listening to and learning prairie chicken songs, he was healed. He then performed the songs and dances for others. In this way, song is medicine and healing in Lakhóta culture. Kite outlines that nonhuman beings can grant humans understanding of new knowledge; she expounds, “You have to listen [to the land and air] to get the song” in an ethical way.<sup>190</sup> Longevity and care are also important, as seen in the concept of Seven Generations, “which considers the effect of our decisions today on people seven generations into the future.”<sup>191</sup> Notably, listening “is a virtue and a sign of respect and maturity” in Lakhóta culture<sup>192</sup> and is a way of interacting with the more-than-human world.

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<sup>187</sup> Rani-Henrik Andersson and David C. Posthumus, *Lakhóta: An Indigenous History* (Norman, OK: University of Oklahoma Press, 2022), 274.

<sup>188</sup> Andersson and Posthumus, *Lakhóta: An Indigenous History*, 294.

<sup>189</sup> Kite often tells this story. See Suzanne Kite, artist talk, streamed live October 19, 2021, by UCLA Design Media Arts, YouTube, <https://youtube.com/watch?v=tNbvzT8mKIw&t=1s>; Leanne Betasamosake Simpson and Kite, “Discussion with Leanne Betasamosake Simpson,” *Ear Wave Event 7* (Spring 2023), <https://earwaveevent.org/article/discussion-with-leanne-simpson/>; Suzanne Kite, “Hél čhaŋkú kiŋ ħpáye (There lies the road): How to Make Art in a Good Way” (PhD thesis, Concordia University, 2023), 262, [https://spectrum.library.concordia.ca/id/eprint/992013/1/Kite\\_PhD\\_S2023.pdf](https://spectrum.library.concordia.ca/id/eprint/992013/1/Kite_PhD_S2023.pdf). Kite clarifies that this is a story she heard but not necessarily a fixed belief by all Lakhóta people; Suzanne Kite, email to author, January 23, 2025.

<sup>190</sup> Simpson and Kite, “Discussion with Leanne Betasamosake Simpson”; Kite, “Hél čhaŋkú kiŋ ħpáye (There lies the road),” 262.

<sup>191</sup> Kite, “Hél čhaŋkú kiŋ ħpáye (There lies the road),” 305.

<sup>192</sup> Andersson and Posthumus, *Lakhóta*, xii.

## Early Listening Experiences

Kite grew up in Los Angeles with adopted parents Aleta and Dennis Kite but has strongly connected with her biological Oglála Lakhóta family in the Kyle and Batesland communities in South Dakota. Through her biological parents, Cynthia Friedman and Matt Svigals, she is related to many other artists. Her grandfathers, Bill Stover (also known as Maḥpíya Nažin) and Edwin Svigals, supported her musically with encouragement to sing and play violin, and she started playing violin at age five when her aunt Alicia Svigals, a Klezmer violinist, gave her the instrument.<sup>193</sup> Growing up, Kite performed in a variety of genres, including orchestral, rap, Klezmer, and electronic music, and she says that these ensemble settings were important for teaching her “how you can’t dominate, you can’t control, you have to listen.”<sup>194</sup>

Kite’s family, in particular, listens to stones (like Madsen). In learning about and from her family, she found that “Stories of intimate and generative relationships with nonhuman beings in stone form emerged as the most important practice in the family, stemming from [her great-grandmother] Evelyn Stover’s passionate engagement with stones.”<sup>195</sup> Kite identifies this relationship with stones as a personal way to maintain a connection with the spirit world and ultimately encourage her to be a better person.<sup>196</sup>

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<sup>193</sup> Kite, “Hél čhaŋkú kiŋ ḥpáye (There lies the road),” 2. For more about Alicia Svigals, see “Alicia Svigals, Klezmer Violinist,” 2024, <https://aliciasvigals.com/home>.

<sup>194</sup> Simpson and Kite, “Discussion with Leanne Betasamosake Simpson.”

<sup>195</sup> Kite, “Hél čhaŋkú kiŋ ḥpáye (There lies the road),” 64.

<sup>196</sup> Suzanne Kite, “Roving Studio Triptych with Artist Kite,” talk, February 26, 2022, posted March 1, 2022, by USC Visions and Voices, <https://www.youtube.com/watch?v=DEtJn08EMM>.

Her grandfather Stover explained that this practice involves listening without the ears and instead with the spirit,<sup>197</sup> which Kite refers to as listening beyond. She also notes,

I often turn towards interviews with my late grandfather, Maḥpíya Náziṅ (Bill Stover), who spoke at length about how listening must occur in the spirit and not the mind. The depth of Indigenous relationships with nonhuman beings, seen and unseen, are tied to covenants with nonhuman Nations over millennia, hyperlocated in both the physical land, but also in the unseen, unknowable cosmologyscape. Music and sound art are part of this cosmologyscape and listening with nonhumans and through nonhumans can generate ethics.<sup>198</sup>

Her Lakḥóta family's philosophies of listening, especially to the more-than-human world through relationships with stones, significantly impact Kite's creative endeavors.

Crucially, working with multispecies and nonhuman beings often forces listeners to encounter the unknown. As Kite describes it, "the more unknowable, the more important something is," and she equates listening to the unknowable with listening to the more-than-human world.<sup>199</sup> She positions dreams as a way to allow such listening and connection because "Dreaming values the unknowable over the knowable,"<sup>200</sup> similar to Ione and Oliveros's ideas. This also reflects the significance of dreams in Lakḥóta culture, which Kite incorporates in her method of composing and performing.<sup>201</sup> As we will see, with her understanding of sound impacted by a Lakḥóta worldview, her works

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<sup>197</sup> Suzanne Kite and Maḥpíya Náziṅ, "It's Not Done through Our Spirit, It's Done through Our Mind," *South as a State of Mind* 11 (Fall/Winter 2019): 55.

<sup>198</sup> Kite, "Listening Beyond," *Ear Wave Event* 7 (Spring 2023), <https://earwaveevent.org/article/listening-beyond/>.

<sup>199</sup> Kite, "Hél čhaṅkú kiṅ ḥpáye (There lies the road)," 8, 103.

<sup>200</sup> Wormsley and Kite, "An Invitation for Black and Indigenous Artists to Dream." See also Vera List Center for Art and Politics, "Conversation: Hél čhaṅkú kiṅ ḥpáye (There lies the road) – A Dialogue About Making Art in a Good Way," May 20, 2021, <https://veralistcenter.org/events/kite>.

<sup>201</sup> Kite, "Hél čhaṅkú kiṅ ḥpáye (There lies the road)," 34.

facilitate connection with the more-than-human world, even if the relationship is not fully understood.

While at Saddleback College in California (2008–2012), Kite began a compositional practice rooted in the experience of dissociation from self while performing. She established it as a way to ultimately “disappear into the composition.”<sup>202</sup> In exploring this with her computer as a responsive instrument, the desire for dissociation from herself led to an interest in the sonification of movement and the building of software like Ableton interfaces which were popular at the time.<sup>203</sup> She recalls, “I wanted to do [data] sonification, I wanted to do visualization, and then I wanted to do this thing that I call tactilization where my body is also enacting the data. But I wanted them to be in circular connection to each other.”<sup>204</sup> Such themes of listening between humans and machines or other bodies persist in Kite’s work.

During her Bachelor of Fine Arts studies at California Institute of the Arts (2014 graduate), she further developed methods to prompt a dissociative state from herself similar to what she chased at Saddleback College. Many elements from this time remain foundational to Kite’s artistic output: “the use of physical movements to create spaces for listening; the pursuit of immersive audio and visual experience during performance; [an] interest in building systems that instigate the disassociative state [*sic*]; and the desire to

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<sup>202</sup> Suzanne Kite, “AI and Music: Non Human and Indigenous Listening,” talk for In Session, posted December 15, 2022, by Sofar Sounds, YouTube, <https://www.youtube.com/watch?v=3f1y69gNSy0>. See also Kite, artist talk at UCLA; Kite, *Hél čhaŋkú kiŋ ěpáye (There lies the road)*,” 3.

<sup>203</sup> Kite, “AI and Music: Non Human and Indigenous Listening”; Kite, “Roving Studio Triptych with Artist Kite.”

<sup>204</sup> Kite, artist talk at UCLA.

explore concepts of unknowability.”<sup>205</sup> Indeed, many of her performances feature dance-like movement, which she explains is an attempt to move herself or contact mics in a way that encourages listening more intently.<sup>206</sup>

### Listening with Interfaces and Machine Learning

In 2015, Kite produced her first work with a wearable electronic interface, *People You Must Look at Me*.<sup>207</sup> The piece is about death and hinges on a video and audio recording from the funeral of her biological mother Cynthia Friedman. Performances feature Kite wearing a small, glowing body interface on her sternum and moving across projections of hand-drawn maps, topography, and the funeral recording. The body interface, which Kite developed in collaboration with James Hurwitz, used a radio module, microcontroller, and accelerometer to direct video and sound – including volume, effects, and panning of pre-recorded material – through Ableton Live software, which was then played through a quadraphonic sound system.<sup>208</sup> In this piece, Kite uses

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<sup>205</sup> Kite, “Hél čhaŋkú kiŋ ħpáye (There lies the road),” 4.

<sup>206</sup> Kite, “AI and Music: Non Human and Indigenous Listening.”

<sup>207</sup> Kite often refers to the piece by this name, though other titles are *Coyote and Badger Were Neighbors* or *The Origin of Eternal Death*. “People You Must Look at Me, 2015,” Kite, 2023, <https://www.kitekitekitekite.com/portfolio/people-you-must-look-at-me-2015>. For video documentation, see “PYML@M 2020 Documentation,” posted May 29, 2020, by Kite, Vimeo, <https://vimeo.com/424080379>; “people you must look at me: overhead sample,” posted September 2, 2015, by Kite, Vimeo, <https://vimeo.com/138062098>; “People You Must Look at Me @ Infinity Room,” posted November 2, 2015, by Kite, Vimeo, <https://vimeo.com/144434848>. For earlier examples of “wearable sound,” see Johannes Birringer and Michèle Danjoux, “Sound and Wearables,” in *Foundations in Sound Design for Embedded Media*, ed. Michael Filimowicz (New York, NY: Routledge, 2020).

<sup>208</sup> Kite, “Hél čhaŋkú kiŋ ħpáye (There lies the road),” 4.

movement and sound to tell and retell other possible versions of an event and to explore “the limits of mapping the Earth, mapping data, and mapping the body.”<sup>209</sup>

The sound for *People You Must Look at Me* was gathered from musical improvisations, her mother’s funeral, and bird calls. A documentation version of the live Ableton sets was also released as an album in 2020, which I refer to in this discussion.<sup>210</sup> The thirteen-minute, seven-track album is “chiastically structured as a cocoon,” and when written consecutively, the track titles spell out “((( ( ( eternal death ) ) )))”<sup>211</sup> Along with Kite performing on Serge synthesizer, Matana Roberts improvised on saxophone, Alicia Svigals on fiddle, and Marilu Donovan on harp.<sup>212</sup> A recording of loon calls that Kite sourced online is also featured throughout the album.<sup>213</sup> Kite’s style of working with musical collaborators is reflected in the process of making this piece. She invited each of the musicians to improvise freely over a looped chord progression without hearing the others, and then she let “weird magical things happen” when their contributions were processed and layered together.<sup>214</sup> The resulting tracks feature four types of sonic material: instrumental improvisations, recorded loon calls, low synthesizer thumping, and sounds recorded from the funeral. Track 1 begins with a melodic jazz-like riff in the saxophone supported by tonal chords, arpeggios, and scales in the harp. The fiddle sneaks

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<sup>209</sup> Kite, *People You Must Look At Me*, Unheard Records, May 11, 2020, <https://unheardrecords.bandcamp.com/album/people-you-must-look-at-me>; “People You Must Look at Me, 2015,” Kite.

<sup>210</sup> Kite, interview by author.

<sup>211</sup> Kite, *People You Must Look At Me*, Unheard Records.

<sup>212</sup> “People You Must Look at Me, 2015,” Kite.

<sup>213</sup> Kite, interview by author.

<sup>214</sup> Kite, artist talk at UCLA; Kite, *People You Must Look At Me*, Unheard Records.

in, sliding between tones, and the synthesizer faintly thumps in the background. Some melodies are repeated by the synthesizer, taking on a more brassy and buzzy quality. The sonic layers and overall volume increase before a sudden stop, whereupon the fiddle continues alone.

The title *People You Must Look at Me* comes from a Lakhóta song that helped Kite during a difficult time.<sup>215</sup> She also drew from Lakhóta epistemology for this piece, which she says

started me on this path of understanding that I could make work from an Oglála Lakhóta perspective, from an Indigenous American Indian perspective, and that I wanted to interact with music and the computer and with improvisers in a way that stayed true to my religion, my people, and our beliefs, and I wanted to explore that.<sup>216</sup>

This piece is important in Kite’s oeuvre for its development and use of the interface. Merging her Indigenous female body with a computer interface in performance, where each element is reacting to the other – as also displayed in Alarcón Díaz’s and Madsen’s work – remains a common thread in her compositional practice. Sonifying data and movement brings her experience to audiences, and such outward expression helps her – and her indigeneity – be heard and therefore recognized.

Another significant work for Kite was her first piece involving machine learning, *Listener* (2018), created the same year as when she graduated with a Master of Fine Arts from Bard College. The idea for *Listener* started in the 7th Generation Character Design workshop in 2018 when Kite “imagined a dystopian future world where a Lakhóta woman has a listening device in her hair which she uses as an extension of her Lakhóta

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<sup>215</sup> Kite, *People You Must Look At Me*, Unheard Records.

<sup>216</sup> Kite, “AI and Music: Non Human and Indigenous Listening.”

epistemological practices” to “hear beings from far away, in the spirit world or otherwise beyond her physical reach.”<sup>217</sup> In performances of *Listener*, Kite wears a long, four-meter braid. She regards the hair as “a sacred, extra-sensory part of the body, making it the logical non-human sonic appendage.”<sup>218</sup> In the hair is woven metal, sound electronics, sweetgrass, sage, and an accelerometer, which tracks pitch, yaw, and roll on the x, y, and z axes so it can sense when it is moved and rotated,<sup>219</sup> similar to how Alarcón Díaz’s INTIMAL app tracks movement. This connects to a synthesizer in Ableton Live, which detects and sends frequency changes to Wekinator, an open-source software created by Rebecca Fiebrink that lets Kite rely on machine learning to build interactive systems without writing code.<sup>220</sup> Wekinator then transmits Open Sound Control (OSC) messages that instruct “a compass made of Lakhóta geometries” projected in the space that Kite can watch and respond to.<sup>221</sup> Kite explained, “Using Wekinator and machine learning (ML) in this piece allowed me to build a system where I was making decisions alongside the computer, creating a circular process of decision-making.”<sup>222</sup>

*Listener* lasts fifteen to twenty-eight minutes and the performance location influences the setup, projections, and sound. It has been performed in multiple places,

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<sup>217</sup> Kite, “Hél čhaŋkú kiŋ ħpáye (There lies the road),” 5–6. Kite also credits encouragement from artist Laetitia Sonami as another source of inspiration for *Listener*; see Suzanne Kite, artist talk, for Creative Inquiries, March 29, 2024, posted May 30, 2024, by VCU Libraries, YouTube, <https://www.youtube.com/watch?v=yqRoVMXM43M>.

<sup>218</sup> “Listener, 2018,” Kite, 2023, <https://www.kitekitekitekite.com/portfolio/listener>.

<sup>219</sup> “Listener, 2018,” Kite.

<sup>220</sup> “Welcome,” Wekinator, 2025, <http://www.wekinator.org>.

<sup>221</sup> Kite, “Roving Studio Triptych with Artist Kite.”

<sup>222</sup> Kite, “Hél čhaŋkú kiŋ ħpáye (There lies the road),” 6.

including the premiere at SAW Video Media Art Centre in Ottawa, Ontario, and subsequent performances at Racing Magpie gallery in Rapid City, South Dakota and Fly Loft in Tulsa, Oklahoma. A video and audio recording from a 2018 performance at Concordia University in Montreal is helpful as one example.<sup>223</sup> It begins in a dark open gallery space, and audio from a police scanner emerges (performances often use six stereo speakers).<sup>224</sup> Kite quietly recites a poetic script about “a future landscape, prophecies, dreams, rumors, and the possibilities in hearing through listening.”<sup>225</sup> Her lilting recitation is recorded, delayed, shuffled, and played back as a garbled version in halted and incomplete phrases and words for the audience to hear. Kite also focuses on the shuffled version to override hearing herself speak in real time.

Next, a circular projection of animated geometric designs of shapes used by Lakǰóta women appears on the floor accompanied by a low, rumbling sound punctuated by a clear-tone two-note motive and percussive hits. Kite enters the space in a large hooded cloak adorned with Lakǰóta symbols, walking around the projections as if corralling,<sup>226</sup> lightly swinging her long braid while the scrambled voice continues. Eventually another circular projection appears on the floor, this one a 3D rendering

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<sup>223</sup> Suzanne Kite, “Listener,” performance, April 7, 2018, posted June 10, 2019, by Aboriginal Territories in Cyberspace, YouTube, <https://www.youtube.com/watch?v=ny-DebRZdV0>. For photo documentation, see Ars Electronica, “Listener / Suzanne Kite (US),” flickr, September 6, 2018, <https://www.flickr.com/photos/arselectronica/42701009670/in/photostream>; for video projections see Kitchener-Waterloo Art Gallery, “Kite: Listener,” Facebook post, June 21, 2020, <https://www.facebook.com/kwartgallerypage/videos/3985428928196429/>.

<sup>224</sup> Kite, interview by author.

<sup>225</sup> Suzanne Kite, “Dreaming a Sovereign Indigenous Future,” *The Funambulist* 24 (June 28, 2019), <https://thefunambulist.net/magazine/24-futurisms/dreaming-sovereign-indigenous-future-suzanne-kite>.

<sup>226</sup> Kite, interview by author.

animation built from the U.S. Geological Survey data of the local area, serving as a reminder of the colonialist practice underlying mapping.<sup>227</sup> Kite walks around the projections, sometimes stopping to kneel and/or swing and rotate the braid. Perceptible rhythms are found in her movement, each video projection, the muddled text, and the accompanying sound. She alternates watching the projections like a compass and listening to the speaking to guide her movements, which in turn changes the projections and audio. More clanging percussive interjections grow in frequency and volume before a final fadeout ends the piece.

In *Listener*, Kite hopes to imagine a sovereign future through ethical and responsible relationships with minerals, metal, hair, and rocks.<sup>228</sup> Significantly, Kite understands listening as a guide both for her actions and for machine learning. She deems her performance practice with computers as engaging with the more-than-human world, and she ponders, “What are computers if not melted stones mined from the earth, from some location within a territory that contains human and nonhuman beings?”<sup>229</sup> Through the use of machine-learning technology, she is able to enter the desired dissociative state from her thinking self that she first pursued at Saddleback College through what she calls a spiral form or spiral time where the decision-making spiral between her and the machines (Wekinator, Ableton, synthesizers, etc.) is so tightly wound that it is difficult

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<sup>227</sup> “Listener, 2018,” Kite.

<sup>228</sup> Kite, “Dreaming a Sovereign Indigenous Future.”

<sup>229</sup> Kite, “Hél čhaŋkú kiŋ ħpáye (There lies the road),” 18.

for her to distinguish where her and the computer's decisions begin and end.<sup>230</sup>

Particularly in *Listener*, she explains how she achieves this:

The feeling of hearing yourself on a 10-second delay and out of order while trying to continue to speak is overwhelming. Those recordings are layered into a spiral form. The more spiralled [*sic*] the form becomes, the more clarity is available, and the more the repetition in the pattern can emerge.<sup>231</sup>

In part, this reminds of the creative work pioneered at the San Francisco Tape Music Center and specifically Oliveros's work with tape delay creating echoes and effects as in *Bye Bye Butterfly*, though Kite's approach was guided by concepts of Indigenous time. Listening in this dissociative state from herself, made possible because of mediated recorded sound, may then allow her to hear spirit and ancestor guides to prepare for speculative futures with the more-than-human world.

Kite furthered the technologies and skills developed in *Listener* in her subsequent art like the sculpture *Ínyan Iyé (Telling Rock)* (2019) done with Devin Ronneberg and performance of *Hél čhaŋkú kiŋ ħpáye (There lies the road)* (2021).<sup>232</sup> She turned her focus to approaching machine learning and artificial intelligence with Lakhóta ethics, and this was the subject for her PhD work at Concordia University in Montreal, where she graduated in 2023. Related, her piece *Wógligleya (Thunǰášila Čěčiyelo)*, to be discussed below, helped Kite develop an ethical collaborative composition method based on Lakhóta values and engage with more-than-human ontologies.

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<sup>230</sup> Kite, artist talk at UCLA. She elaborates that the idea of spiral time came in response to challenges from Scott Benesiinaabandan to explore something more specific than Indigenous time as circular.

<sup>231</sup> Riel Bellow and Kite, "Practising the Unattainable," *Canadian Art*, March 11, 2021, <https://canadianart.ca/interviews/practising-the-unattainable-bellow-kite>.

<sup>232</sup> Kite, "Hél čhaŋkú kiŋ ħpáye (There lies the road)," 107.

## *Wógligleya (Ṭḥuŋkášila Čěčiyelo)*

### Background

For her dissertation “Hél čhaŋkú kiŋ ħpáye (There lies the road): How to Make Art in a Good Way” (2023), Kite conducted interviews with Lakhóta artists to discover how they rely on reciprocal relationships with the more-than-human world to create ethical art. One interviewee of significance was musician Santee Witt, whom Kite came to know between June and November 2021. She made the video *Okáletkehaŋ* (*Branching*) focused on Witt and his protocols, including scenes with his Peyote Box used in Native American Church (NAC) ceremonies, his personalized water drum, and a song with the drum that Kite later responded to by creating a stone sculpture.<sup>233</sup> In 2021, Kite was also commissioned to write a piece for the Chicago quartet Third Coast Percussion. She stated, “I could not imagine doing such an important show without a collaborator and reached out to Witt to see if he wanted to try an experimental composition method.”<sup>234</sup> He agreed, and the piece became *Wógligleya (Ṭḥuŋkášila Čěčiyelo)*.

They chose Witt’s song *Ṭḥuŋkášila Čěčiyelo* as the piece’s center. Inspiration for the song came when Witt was moved to pray. He recalled,

So I start singing a song outside my window, a good morning song, you know? So, I start singing it; it’s just good morning song. Talks about honoring the sun. You hear these birds, man, right outside my window. They’re chirping. All the sudden when I sing this song, they start chiming in with like the Sun Dance whistles.<sup>235</sup>

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<sup>233</sup> Kite, “Hél čhaŋkú kiŋ ħpáye (There lies the road),” 68.

<sup>234</sup> Kite, “Hél čhaŋkú kiŋ ħpáye (There lies the road),” 69.

<sup>235</sup> Kite, “Hél čhaŋkú kiŋ ħpáye (There lies the road),” 276.

The whistles Witt mentions here are made from eagle wing bones and used in the multi-day Sun Dance ceremony that culminates with dancers moving to remove inserted bone pieces from their bodies.<sup>236</sup> The hollow-bone whistles make a thin, high-pitched sound described as wailing that imitates eagle calls.<sup>237</sup> Witt continues,

There's a certain rhythm to it and these birds are doing it, and they sound just like that as I was singing this song. So it's Creator speaking to me. I said, "Ah, these spirits, these birds, everything is here. Something powerful's going on." So I knew right then and there, everything's going to be okay."<sup>238</sup>

This follows Witt's practice of listening for songs within him from spirits, accessible through meditation, and Kite points to his composition process for *Ṭḥuŋkášila Čečiyelo* as an example of obtaining knowledge through listening to various beings, specifically birds in this case.<sup>239</sup> Though the birds are not identified by species, they are part of Witt's life, routine, and living environment, and their sonic guidance is part of a reciprocal relationship – paramount in Lakhóta culture<sup>240</sup> – also including Witt's prayer and songs. In the lyrics *Ṭḥuŋkášila Čečiyelo*, Witt asks to be listened to by Creator (Ṭḥuŋkášila, Grandfather): "Ṭḥuŋkášila Čhékiyelo (I am crying a prayer, Grandfather) / Ṭḥuŋkášila Namačíh'uy (Hear me, Grandfather)."<sup>241</sup> Continued listening and being heard could then create a feedback loop with the more-than-human world.

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<sup>236</sup> "The Sun Dance – Wiwányang Wačipi," Aktá Lakota Museum & Cultural Center, 2025, <https://aktalakota.stjo.org/seven-sacred-rites/wiwanyang-wachipi-sun-dance/>.

<sup>237</sup> Jeffrey Zelitch, "The Lakota Sun Dance," *Expedition Magazine* (Fall 1970): 22.

<sup>238</sup> Kite, "Hél čhaŋkú kiŋ ħpáye (There lies the road)," 276–277.

<sup>239</sup> Kite, "Hél čhaŋkú kiŋ ħpáye (There lies the road)," 72.

<sup>240</sup> Kite, "Hél čhaŋkú kiŋ ħpáye (There lies the road)," 11.

<sup>241</sup> Kite, "Hél čhaŋkú kiŋ ħpáye (There lies the road)," 72, 380–381.

Witt's song *Ṭḥuŋkášila Čečiyelo* was eventually framed by Third Coast Percussion's realization of a graphic score, which Kite and the ensemble members Sean Connors, Robert Dillon, Peter Martin, and David Skidmore developed together. The ideas Kite proposed in the first workshop with Third Coast Percussion were built from her own melodic analysis of Witt's song.<sup>242</sup> After that initial meeting, Kite requested that the quartet members each relay a dream using the Lakḥóta Shape Kit designed by Sadie Red Wing, which communicates Lakḥóta concepts through visual symbols (fig. 14).<sup>243</sup> Importantly, Kite asserts that "Red Wing's Lakḥóta Shape Kit enacts visual sovereignty because it is a method of knowledge creation that [facilitates] the movement of knowledge through communication with the nonhuman world."<sup>244</sup> Kite asked not to know the details or meanings of the dreams, and she recounts, "All they did was promise me that it was a significant dream."<sup>245</sup> After each musician sent Kite their dream, she worked with designer Unna Regino to combine them into one design consistent with the originals' numerology and directionality.<sup>246</sup> This became the graphic score for *Wógligleya (Ṭḥuŋkášila Čečiyelo)* (fig. 15). For the premiere, Kite worked with Giorgi Janiashvili to animate the score, and the animation was projected behind the performers.<sup>247</sup>

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<sup>242</sup> Kite, "Hél čhaŋkú kiŋ ḥpáye (There lies the road)," 82.

<sup>243</sup> See Sadie Red Wing, "Learning the Traditional Lakḥóta Visual Language through Shape Play" (master's thesis, North Carolina State University, 2016), Issuu, [https://issuu.com/sadieredwing/docs/srw\\_thesis\\_2016](https://issuu.com/sadieredwing/docs/srw_thesis_2016).

<sup>244</sup> Kite, "Hél čhaŋkú kiŋ ḥpáye (There lies the road)," 45.

<sup>245</sup> Kite, interview by author.

<sup>246</sup> Kite, "Hél čhaŋkú kiŋ ḥpáye (There lies the road)," 84.

<sup>247</sup> Kite, "Hél čhaŋkú kiŋ ḥpáye (There lies the road)," 84.

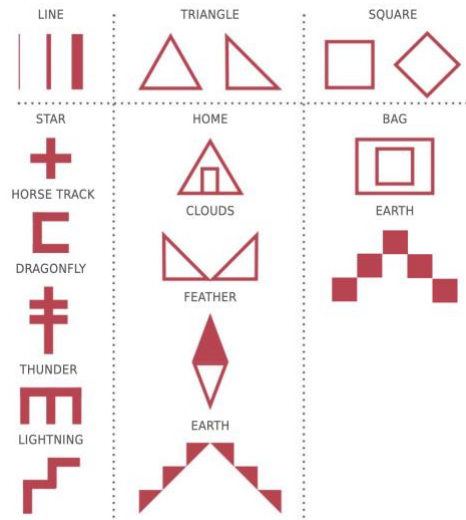


Figure 14. Lakhóta Shape Kit and grammar chart. (Sadie Red Wing, “Learning the Traditional Lakhóta Visual Language through Shape Play” (master’s thesis, North Carolina State University, 2016), Issuu, [https://issuu.com/sadieredwing/docs/srw\\_thesis\\_2016](https://issuu.com/sadieredwing/docs/srw_thesis_2016).)

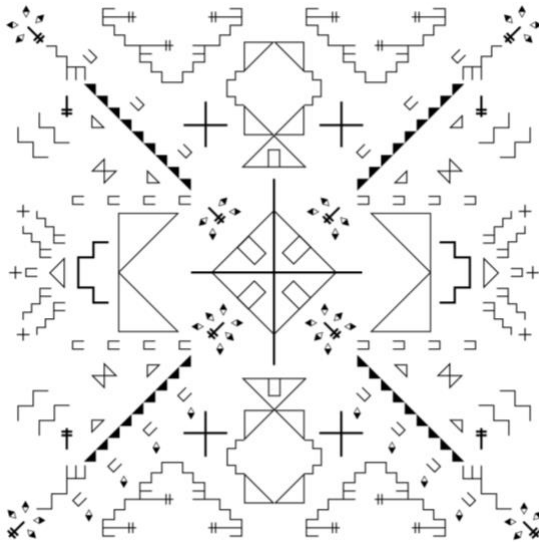


Figure 15. Score for *Wógligleya (Thunkášila Čečiyelo)* based on ensemble members’ dreams. (Suzanne Kite, “Hél čhaŋkú kiŋ ħpáye (There lies the road): How to Make Art in a Good Way” (PhD thesis, Concordia University, 2023), 82, [https://spectrum.library.concordia.ca/id/eprint/992013/1/Kite\\_PhD\\_S2023.pdf](https://spectrum.library.concordia.ca/id/eprint/992013/1/Kite_PhD_S2023.pdf).)

It is common for Kite to present graphic scores for improvising musicians to realize, also seen in *Potential Transformation of Power* (2018); *Tho Win (Blue Woman)*

#1 (2019); *Wichahpih'a* (a clear night with a star-filled sky or a starlit night) (2020); and *Oihanbleta* (In a Dream) (2023), each an embroidery of Lakhóta shapes.<sup>248</sup> In these geometric designs, “duplicating and mirroring a symbol is a visual convention that expresses equality,”<sup>249</sup> though it is unclear if Kite’s musicians are typically familiar with or provided a shape kit as a legend. Not including a legend could invite unknowability to the experience.

The score for *Wógligleya* (*Thunkášila Čečiyelo*) uses multiples of each triangle and line symbol from the Lakhóta Shape Kit: star, horse track, dragonfly, thunder, lightning, home, clouds, feather, and earth. Bold “earth” lines of dark triangles create a visual rhythm and divide the score into four sections, with sections mirrored across the middle “star” cross. Kite guided Third Coast Percussion to follow the score by moving from the outside, to the middle star, and back out,

making sure they totally understood the ... directional approach. So they would enter, from their own decision, they would follow a pre-decided path. They started doing the same path every time, but they would go through each other’s dreams, they weren’t sticking just to their own dreams. Going through the middle. And then the middle was really planned ... to create that, the perfect drone for Santee to sing over.<sup>250</sup>

In the score, four diagonal earth lines suggest the shape of two triangles or cones meeting at a shared tip in the center. This shape of mirrored triangles is the Lakhóta symbol for Sun-Earth connection,<sup>251</sup> or what Kite calls cosmologyscapes, “the web of

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<sup>248</sup> See “Leather and Satin Embroideries, 2018-2020,” Kite, 2023, <https://www.kitekitekitekite.com/portfolio/wichahpiha-a-clear-night-with-a-star-filled-sky-of-a-starlit-night-2020>.

<sup>249</sup> See Red Wing, “Learning the Traditional Lakhóta Visual Language through Shape Play.”

<sup>250</sup> Kite, interview by author.

<sup>251</sup> “Lakota Parallels,” NASA, 2025, <https://sunearthday.nasa.gov/2005/na/lakota.htm>.

human-human, human-nonhuman, and nonhuman-nonhuman relationships in a place, where place includes the land and the cosmos and everything in between ... into one sphere of perception.”<sup>252</sup> Significantly, Kite describes how the connected cone shape (fig. 16) was fundamental in her composition practice for *Wógligleya (Ṭḥuŋkášila Čěčiyelo)*:

So, the composition is the star in the center, it’s the resulting artwork. It’s the song he [Santee] wrote while listening to birds, and it’s the song I wrote while collaborating with many, many people, and it’s the dreams - that composition’s built out of dreams of the instrumentalists. So, this star is all of those collaborations: seen, unseen, dreams, visions, thoughts, memories all poured into one art object at the end. Deep research, all those things. So, on one end, we have a representation of the earth [right] and, [on] the other, [the] representation of a star [left], and the human and nonhuman, the seen, the unseen, cosmos and land collaborating in order to create an art object that is hopefully as ethical as we can possibly get, or good, or good for the world.<sup>253</sup>

Inclusion of the cone shapes at various stages of *Wógligleya (Ṭḥuŋkášila Čěčiyelo)* reflects the respect for and inclusion of the more-than-human world in Laḳhóta culture.

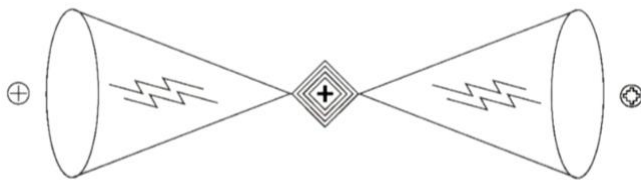


Figure 16. Graphic Kite uses to show how to make art in a good way. (Suzanne Kite, “AI and Music: Non Human and Indigenous Listening,” talk for In Session, posted December 15, 2022, by Sofar Sounds, YouTube, <https://www.youtube.com/watch?v=3f1y69gNSy0>.)

<sup>252</sup> Kite, “Hél čhaŋkú kiŋ ĥpáye (There lies the road),” 10; Kite, “Postmodernism Is Not Permission,” Forge Project, October 18, 2023, <https://forgeproject.com/forging/postmodernism-is-not-permission>. Kite credits Tuscarora artist and historian Jolene Rickard as introducing her to the concept of cosmologyscapes.

<sup>253</sup> Kite, “AI and Music: Non Human and Indigenous Listening.”

## In Performance

Video from the piece's premiere at Constellation in Chicago shows Third Coast Percussion in a setup similar to the score layout, with two players next to each other (Dillon and Martin) facing the other two (Conners and Skidmore).<sup>254</sup> Each performer has a mix of instruments that, for the most part, differ from the other players (detailed below). To choose the specific instruments, Kite remembers,

everybody contributed in some way. We did a lot of time together. They're really, really good listeners and they also are really good at taking responsibility for their decision making, so it was a real balance. ... I for sure had a heavy influence on what kind of tonal sounds I wanted to hear. ... they have an insane library of instruments. ... And so, it was try new things, try new things, try new things until we settled on a palette. And they just like would wow me with their suggestions for instruments. I even went and bought some of them for myself because I was like I want this as part of my palette.<sup>255</sup>

During the piece, the score animation was projected on the back wall. The fifteen-minute performance is structured into three short sections at the start that are reversed at the end and frame one long segment in the middle. Such a structure follows the mirroring theme displayed by the score and highlights Witt's song, and therefore Indigenous voices and practices, as central to the piece.

The piece begins with loud and raucous sounds, without discernable metric patterns, made on a threaded rod, bass drum, seed shell shaker, accordion tube, floor toms, and spiral trash cymbal. The volume, ensemble member movements, and intensity gradually lessen, and the gentle higher-pitched swirling sounds of a whirly tube are

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<sup>254</sup> Third Coast Percussion, "Frequency Series Presents," annual Currents concert, streamed live June 26, 2022, by Constellation Chicago, YouTube, <https://www.youtube.com/watch?v=BPNXMCo2z0o>. *Wógligleya (Thuḡkášila Čečiyelo)* begins at 18:16 and includes an introduction by Kite.

<sup>255</sup> Kite, interview by author.

introduced. Skidmore marks the next section with a strong, fast fake stroke with a thin dowel through the air, prompting each member to start playing new instruments. The sonic texture thins with a resonant almglocke and a flurry of tones from chromatic desk bells contributing clearly articulated tones over high, irregular pitch bends by bowed flexatone and the low rumblings of a superball mallet dragging across the floor tom drumhead. The next marked section features more percussive attacks and increased volume and rhythmic activity, including striking mid-frequency range woodblocks in rhythmic patterns and rolls, clanging together multi-pitched metal pipes, slowly rubbing terracotta flower pots together for a grating sound, wringing accordion tubes, hitting and brushing a low floor tom in a lilting pattern, and scraping high-pitched metal bowls. After a loud roll on the floor tom by Connors ends abruptly, the almglocke and desk bells sound like wind chimes. Connors starts bowing on marimba as Martin plays handchimes, including short but mellow rhythmic interjections on a muted chime. Each percussionist transitions to sustained tones around B-flat on marimba, vibraphone, metal pipes, and singing bowls, which creates a slowing and calming feel musically and dynamically.

The sustain provides a harmonic foundation for Witt's song. Witt, his daughter Acacia Witt, and his girlfriend Melia Anthony enter. In doing so, this was the first time Third Coast Percussion shared the stage with American Indigenous artists.<sup>256</sup> Witt begins singing into a microphone with a full tone in a mid-to-high register, and Acacia and Anthony join in higher octaves to end phrases in unison. The melody is metered with repeated rhythms, and the melodic lines are smooth and legato. Some phrases are

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<sup>256</sup> Third Coast Percussion, "Annual Report 2021–22 Season," December 15, 2022, 9, [https://issuu.com/thirdcoastpercussion/docs/tcp\\_annual\\_report\\_2022\\_v5b\\_final](https://issuu.com/thirdcoastpercussion/docs/tcp_annual_report_2022_v5b_final).

sequenced, most moving down in pitch, and the clear phrases are repeated multiple times. Witt ornaments the melody occasionally with grace notes and grows intensity throughout the song by getting louder and adding a gritty quality to his voice at the start of select phrase repetitions. The percussionists continue sustaining notes on marimba, vibraphone, pipes, and singing bowls while layering articulated, regular rhythmic interjections of mid-range sounds on the bowls and handchimes plus low rumbling bass drum and floor tom rolls. Connors adds high-pitched whistling for the bird presence that inspired Witt, and Kite describes that “[d]uring the public performance, we had plants who whistled in the audience to become the birds.”<sup>257</sup> The song section ends with a gradual decrescendo, most noticeable in Witt’s dynamic and timbral softening.

Notably, Witt and his family are positioned to the side of the ensemble. Though the score suggests that the singers could be at the center of the percussion quartet (and they were centered for a studio recording),<sup>258</sup> constraints of the physical space did not allow this. However, their sidelined physical location is corrected by centralizing their sonic presence. This middle *Thun̄kášila Čečiyelo* song is the longest section of the piece, and the melodic and lyrical repetition supported by harmonic stasis creates a sense of suspension in time. By centering Witt’s song durationally, structurally, compositionally, and sonically, Kite empowers Indigenous voices and philosophy to literally and figuratively reclaim the space with their presence. After Witt’s song ends, the singers move off stage, and the percussionists play the opening sections in reverse. They

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<sup>257</sup> Kite, interview by author.

<sup>258</sup> Kite, interview by author. The layout can be seen in Third Coast Percussion, “‘Wógligleya (Thun̄kášila Čečiyelo)’ by Kite, in collaboration with Santee Witt,” recording made June 2022 at Third Coast Percussion’s rehearsal studio, posted October 27, 2022, by Third Coast Percussion, YouTube, <https://www.youtube.com/watch?v=Fqke5hakkNc>.

gradually increase timbral complexity, eventually returning to raucous and loud playing of the opening material before a synchronized stop and the stage going black.

The number and variety of instruments contributes to the timbral richness in *Wógligleya (Thunkášila Čečiyelo)*, which Kite and Third Coast Percussion chose together. Furthermore, Kite explains that in Lakhóta philosophy, materials and objects like instruments may contain the capacity for aliveness.<sup>259</sup> She understands instruments as being originally from the earth, regardless of whether they are made from natural or synthetic materials, and she speaks of the possibility for intimate relationships with instruments and the potential blurring between performer and instrument.<sup>260</sup> *Wógligleya (Thunkášila Čečiyelo)* is an example of how instruments can “help communicate and make new knowledge”<sup>261</sup> in an intentionally collaborative creative process.

Dreams are also an important element in the work. Dreams were foundational to the creation of the piece and score design, which reflects Kite’s framing of dreams as technology that allow knowledge to move from more-than-human to human realms.<sup>262</sup> By inviting the percussionists to pay attention to, reflect on, recreate using the Lakhóta Shape Kit, and sonically respond to their dreams, Kite imbued the practice of dreamwork

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<sup>259</sup> Kite, “Hél čhaŋkú kiŋ ħpáye (There lies the road),” 14–15. She uses the term “interiority” as suggested by anthropologist Philippe Descola. She also notes that the capacity for aliveness does not mean everything has animacy or interiority.

<sup>260</sup> Kite, “Hél čhaŋkú kiŋ ħpáye (There lies the road),” 254; Kite, “Roving Studio Triptych with Artist Kite.”

<sup>261</sup> Kite, “Hél čhaŋkú kiŋ ħpáye (There lies the road),” 108.

<sup>262</sup> Kite, “Dreaming a Sovereign Indigenous Future”; Wormsley and Kite, “An Invitation for Black and Indigenous Artists to Dream.”

to *Wógligleya (Thŭŋkášila Čěčiyelo)* and invited dreams as a significant contributor. This also allows for listening to the more-than-human world through unknowability.<sup>263</sup>

Further, inspiration from dreams expands the scope of environmental awareness necessary for the piece. The dream worlds of Third Coast Percussion and Witt are brought together in a Western performance space through Lakhóta symbols and song. Kite writes, “Relationality is rooted in context and the prime context is place.”<sup>264</sup> By extension, both the dream spaces and the performance space provide a means of connection to humans and the more-than-human world. Witt’s inspiration from birds also reveals his acoustic awareness of their sounds outside his window. In the performance, however, the whistled iterations of bird calls are based on human interpretation, and it is unclear if the patterns were intended to imitate a specific species or if they are instead stylized bird calls within human-imposed structures. Because the compositional significance of the bird calls was not made explicit in the introductory remarks, the audience may have received it as a reduction of bird sounds taken out of context to be framed as human music. However, this example of bird call inclusion departs from the Western classical concert examples discussed in Chapter 2 due to Witt offering a reciprocal song.

Still, colonialist elements persist in this premiere. The performance setting accommodates settler listening by subscribing to traditional concert listening practices of a stationary audience watching the stage in silence. Given this, *Wógligleya (Thŭŋkášila*

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<sup>263</sup> Kite, “Hél čhajkú kiŋ ħpáye (There lies the road),” 103.

<sup>264</sup> Jason Edward Lewis, Noelani Arista, Archer Pechawis, and Suzanne Kite, “Making Kin with the Machines,” *Journal of Design and Science* 3.5 (July 16, 2018), <https://doi.org/10.21428/bfafd97b>.

*Čečiyelo*) could be tokenized or symbolic without reciprocity or action from the audience. Creatively, musically, and structurally Kite works against this, but the performance constraints and setting could reinscribe it. Importantly, Kite was able to frame the performance with a pre-recorded video introduction explaining the Lakǰóta grounding, but the audience can remain passive. If they are not brought into a type of relationship or embodied participation with the work or artists, they could perpetuate the concert model that Kite and Witt work against.

Kite also shifts the concert dynamic through treatment of time. A sense of time and temporality is often obscured in dreams. Although *Wógligleya (Tǰunǰášila Čečiyelo)* follows a structure based on relative long and short sections, within each percussion section, perceived time is somewhat suspended, independent from traditional metered rhythm (as it is in dreams). The score itself, in its use of Lakǰóta visual language, facilitates one tense inclusive of past, present, and future simultaneously.<sup>265</sup> Additionally, the continuous rolls of harmonically static textures and repeated vocal melodic figures during Witt’s song may evoke a timeless quality for listeners. Kite explains that

the word in Lakǰóta for dream, it doesn’t mean necessarily waking or sleeping dream, that context. So that’s a first linguistic proof of the complexity of the definition. But then the science now shows us that, [in] my work with the scientist Adam Horowitz and my post doc Antoine Bellemare ... it’s more like a gradient of dreaming all day. ... And I do feel more and more like it’s just a gradient. Like I could do it right now. I might be doing it right now.<sup>266</sup>

The creation and performance of *Wógligleya (Tǰunǰášila Čečiyelo)* rested on embodied experiences. After exploring the origin of songs, Kite concluded they are

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<sup>265</sup> Kite, “Hél čhajkú kiǰ ģpáye (There lies the road),” 54; Digital Economies Lab, “Suzanne Kite in Conversation,” posted April 13, 2021, by Art Engine, Vimeo, <https://vimeo.com/536499155>.

<sup>266</sup> Kite, interview by author.

learned from the more-than-human world<sup>267</sup> and listening through and to the body is key to learning songs.<sup>268</sup> Such “body-centered acts of knowledge creation” are fundamental since “Lakhóta artworks can be dreamed through the body, made with the body, interpreted in the body, and worn on the body.”<sup>269</sup> In the case of *Wógligleya (Ṭḥuŋkášila Čečiyelo)*, knowledge from dreams and birds is embodied by humans and instruments through sonic performance.

Collaboration was integral: Kite listened to Witt as a knowledge holder, Witt was open to inspiration from the birds in creating his song, Kite invited Witt to contribute, Witt called on Ṭḥuŋkášila (Grandfather), Third Coast Percussion depicted their dreams, Regino designed and Janiashvili animated the visual score, Witt brought in his family as singers, the percussionists prepared together for the performance, and each contributor softened to the unknowable in the process. This piece also draws on Indigenous knowledge and protocols as models for mutual respect and ethical relationships. In fact, Kite deems the piece successful because she followed an Indigenous practice of ethics in including Santee and collaborating with others, therefore decentering herself as composer.<sup>270</sup> Moreover, Kite explicitly intends her art to be ethical for future generations, which could also be interpreted as reciprocation or thanks for the more-than-human inspiration and materials that make the work possible. *Wógligleya (Ṭḥuŋkášila Čečiyelo)*

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<sup>267</sup> Kite, “Hél čhaŋkú kiŋ ħpáye (There lies the road),” 150.

<sup>268</sup> Vera List Center for Art and Politics, “Conversation: Hél čhaŋkú kiŋ ħpáye (There lies the road”); Suzanne Kite and Scott Benesiinaabandan, “My Ears were Ready to Hear That Thing,” *Sound American* 25 (2020), <https://soundamerican.org/issues/folk/my-ears-were-ready-hear-thing>.

<sup>269</sup> Kite, “Hél čhaŋkú kiŋ ħpáye (There lies the road),” 26–27. See also Andersson and Posthumus, *Lakhóta*, 294.

<sup>270</sup> Kite, interview by author.

emphasizes that the more-than-human world – specifically human dreams and birds – are worth listening to.

### **Kite’s Relation to Deep Listening**

Kite relies on dreams in other works as well, such as *Oíhaņke Waniĉa (Infinity)* (2023) and *Oíhaņbleta (In a Dream)* (2023), where she embroidered her dreams onto velvet and deer hides using the Lakĥóta Shape Kit.<sup>271</sup> Importantly, the embroidery patterns were then used as scores for musical performance, similar to the collaborative visual dream score in *Wógligleya (Tĥuņkášila Āĉĉiyelo)*. She also uses text scores as instructions for listening and imagining, as in *Listening to Nonhumans* (2023), created with Robbie Wing.<sup>272</sup> *Listening to Nonhumans* starts with silent walking while listening to the physical world and concludes with group dreaming to listen to the nonphysical world, similar to group activities carried out by the ♀ Ensemble and in Deep Listening retreats. Many of the prompts are posed as questions:

For the next 5 minutes, Do you have permission to listen? Can you remember how to hear the unheard sounds of nonhumans? Do you know how far you can ... listen? Listen to end of street, edge of the city, base of the mountains, to the horizon, base of the mountains, edge of the city, end of the street. Repeat.<sup>273</sup>

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<sup>271</sup> “Oíhaņke Waniĉa (Infinity), 2023,” Kite, 2023, <https://www.kitekitekitekite.com/portfolio/ohake-wana-infinity-2023>; “Oíhaņbleta (In a Dream), 2023,” Kite, 2023, <https://www.kitekitekitekite.com/portfolio/ohableta-in-a-dream-2023>.

<sup>272</sup> Kite and Robbie Wing, “Listening to Nonhumans,” *Ear Wave Event 7* (Spring 2023), <https://earwaveevent.org/article/listening-to-nonhumans/>.

<sup>273</sup> Kite and Wing, “Listening to Nonhumans.”

Notably, Oliveros similarly structured select text scores with questions, seen in *Deep Listening Through the Millennium* (1998) and *Deep Listening Meditations – Egypt* (1999) where she pointedly asked, “How far away can you hear sounds?”<sup>274</sup>

However, Kite has distinguished her listening practice from both Oliveros and Deep Listening. She rightly challenges the prevalent view of Oliveros as an individualistic champion for a listening practice intended as collaborative and communal.<sup>275</sup> Related, Deep Listeners recognize that

While Oliveros’ scores bring the human performer into sensitive relational attunement to, and improvisation with, human and more-than-human others, the individual human body remains the starting point in Deep Listening scores. This marks the practice’s historical enmeshment, despite itself, in settler ideologies of human supremacist individualism.<sup>276</sup>

Further, as guest editor for an issue of the zine *Ear Wave Event*, Kite discussed philosophical differences between Indigenous listening and Deep Listening with geographer AM Kanngieser and anthropologist Zoe Todd. Together, they question the reciprocity of Deep Listening and critique it as one-sided for not considering the relational aspect of listening and how human listening may impact the more-than-human world in ways not invited.<sup>277</sup> Elsewhere in the issue, Kite talks with Diné composer Raven Chacon about the privilege inherent to selective listening in Oliveros’s practice, and they critique Deep Listening as a technique to gain knowledge of places without

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<sup>274</sup> Oliveros, *Deep Listening: A Composer’s Sound Practice*, 33, 39, 55.

<sup>275</sup> Kite, interview by author.

<sup>276</sup> Stephanie Loveless and Freya Zinovieff, “Listening to Our Listening: Deep Listening in Critical Sites,” in *Situated Listening: Attending to the Unheard*, ed. Stephanie Loveless, Tullis Rennie, Morten Søndergaard, and Freya Zinovieff (London, ENG: Focal Press, 2025), 44.

<sup>277</sup> Am Kanngieser, Zoe Todd, and Kite, “Discussion with AM Kanngieser & Zoe Todd,” *Ear Wave Event* 7 (Spring 2023), <https://earwaveevent.org/article/discussion-with-am-kanngieser-zoe-todd/>.

context.<sup>278</sup> Kite also delineates between Indigenous reciprocal listening and colonialist, extractive New Age listening in conversation with writer and musician Leanne Betasamosake Simpson.<sup>279</sup> At the heart of these critical reviews is a sensitivity to the ethics of listening.

Interestingly, Skwah artist and researcher Dylan Robinson, who writes about Indigenous public art and listener positionality, also critically examines Deep Listening, but as a possible mode of decolonizing listening in his book *Hungry Listening: Resonant Theory for Indigenous Sound Studies*.<sup>280</sup> In the conclusion, he and scholars Deborah Wong and Ellen Waterman discuss the Deep Listening practice as responsive and flexible, and they explain how it follows Wong's proposed protocol for decolonial listening to "wait until invited in, and then listen ... and speak only if invited, and keep listening,"<sup>281</sup> also mirroring elements of the dadirri exercise discussed in Chapter 3. Consistent listening is fundamental to Deep Listening, and, as Oliveros stated, it "involves a reciprocity of energy flow."<sup>282</sup> It sets up an openness for the listener to continually shift their awareness of others and allow relationships to form and guide future listening.

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<sup>278</sup> Raven Chacon and Kite, "Discussion with Raven Chacon," *Ear Wave Event 7* (Spring 2023), <https://earwaveevent.org/article/discussion-with-raven-chacon/>.

<sup>279</sup> Simpson and Kite, "Discussion with Leanne Betasamosake Simpson."

<sup>280</sup> Dylan Robinson, *Hungry Listening: Resonant Theory for Indigenous Sound Studies* (Minneapolis, MN: University of Minnesota Press, 2020).

<sup>281</sup> Robinson, *Hungry Listening*, 250–252.

<sup>282</sup> Pauline Oliveros, "Quantum Listening: From Practice to Theory (to Practice Practice)," *SoundArtArchive*, December 1999, <https://s3.amazonaws.com/arena-attachments/736945/19af465bc3fc3c8d5249713cd586b28.pdf>.

Robinson does question Deep Listeners' ability to understand one's own positionality; he says, "in the few exercises I've participated in I've wondered about how my experience of their meditative opening up of listening through the body has also seemed to distance me from the particularity of listening positionality rather than increase my ability to 'tune-in' to positionality."<sup>283</sup> I argue that both (or neither) can be true of Deep Listening exercises. This is part of the constant balance and shifting between global/focal and inner/outer perspectives that Deep Listening aims for. Starting a listening meditation may reveal an initial positionality, which is then repositioned throughout the meditation as the listener grows awareness of sensations and others.

For example, in a 2024 Deep Listening workshop I held at a local music school, each person was prompted to move through the space and identify sounds to later share with the group. For me, how I understood myself impacted how I interacted with the place and what sonic properties my awareness was drawn to. During the exploratory phase, I began as largely focused on my role as facilitator, feeling pressured to find sounds. Next, I was hesitant to move through the space because of my status as a guest in the building, so I instead paused to let sounds find me. Then going outside the building, which was near a busy road, I was aware of being a pedestrian where sounds could signal danger. Moving away from the road, once I felt safer, my positionality shifted to be part of the area's activity, learning from the sounds as guidance.

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<sup>283</sup> Robinson, *Hungry Listening*, 247. Robinson's concerns are also centralized in Loveless and Zinovief, "Listening to Our Listening," 36–39.

Waterman and Wong’s understanding of Deep Listening as a way to decolonize listening supports my interpretation of Deep Listening as caring and environmental listening with the more-than-human world. Further, according to Stephanie Loveless,

In our contemporary moment, it may be necessary to map one’s own situated context and positionality onto what were designed as very broad, open-ended exercises. And many of the more recent text scores written by folks involved in the practice (including many that are published in “A Year of Deep Listening”) include exactly these kinds of specificities; in these scores, the listener is brought into situated relation with (and consciousness of) the very particular species and voices and histories and presents and futures of the places where they are listening.<sup>284</sup>

Additionally, teacher Michael Reiley has noticed a shift in the Deep Listening community to “An embrace and openness towards decolonizing Deep Listening” itself.<sup>285</sup> However, the consistent critiques of Deep Listening from Indigenous perspectives point to the work remaining.<sup>286</sup>

Kite argues for Indigenous protocols as means to “provide the ethics necessary for the rest of the human world to relearn how to be good relatives to nonhumans.”<sup>287</sup> The Center for Deep Listening recognized this need and hosted a talk by Kite in 2024. In the resulting event, “Nonhuman Futures: with KITE (aka Dr. Suzanne Kite),” Kite discussed her work and research and framed listening as a way to ethically communicate with the more-than-human world.<sup>288</sup> She also positioned dreaming as a technology and protocol

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<sup>284</sup> Stephanie Loveless, interview by author, June 27, 2025.

<sup>285</sup> Michael Reiley, e-mail message to author, June 17, 2025.

<sup>286</sup> See also Tara Browner, ““They Could Have an Indian Soul’: *Crow Two* and the Processes of Cultural Appropriation,” *The Journal of Musicological Research* 19, no. 3 (2000): 243–263.

<sup>287</sup> Kite, “Hél čhaŋkú kiŋ ħpáye (There lies the road),” 1.

<sup>288</sup> Suzanne Kite, “Nonhuman Futures,” talk for The Center for Deep Listening, virtual, March 20, 2024.

for this connection.<sup>289</sup> Though this is distinct from Deep Listening in philosophy and practice, I see similarities to the Deep Listening dream modality since both rely on awareness of dreams to relate to other beings and timelines.

## **Technologies and Dreaming**

### The Role of Sound Recording Technologies for Listening

The three artists discussed in this chapter all rely on listening as a means to grow awareness of voices and beings. Audiences come to know the various subjects through sound, situating sonic knowledge as key. Significantly, pieces by each artist use sound recording, playback, processing, and/or digital technologies to better hear others: Alarcón Díaz's mobile app INTIMAL tracks body movement through spaces to recount migrant stories; Madsen utilizes contact mics, effects pedals, and speakers to amplify the movement of rocks in *The Voices of Stones*; and Kite works with machine learning as in *Listener* to engage with computers and center Lakǵóta futures, ethics, and Indigenous sovereignty. In such pieces, software and speakers are vital for making known the experience of others and their ways of being.

Because this technology allows participants to sonically engage with others, it is important to address its role in listening. In these cases, the technology can act as a translation tool to accommodate communication. If communication is understood as the transfer of information between or within species,<sup>290</sup> the technology works to connect

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<sup>289</sup> Kite, "Hél čhaŋkú kiŋ ħpáye (There lies the road)," 103.

<sup>290</sup> Gagliano, "Green Symphonies," 789.

entities through the encoding and decoding, or sending and receiving, of messages. In interspecies communication, scientist Matthew Hall reminds us that,

“voices” can be transmitted through narratives in which other-than-human persons are featured. Situated stories, songs, and poems can be powerful aids to the recognition of autonomy and personhood ... Ritual enactment of our kinship relationships with other-than-humans is another powerful way for human persons to lose the “false sense of themselves as superior.” It is important, however, that while expressing the human side of dialogue, we also allow others to “speak” for themselves. Otherwise we risk falling back into destructive monologues.<sup>291</sup>

Through the creative work discussed in the above case studies, the artists strive to create opportunities for humans to engage in conversations with the more-than-human world by providing technological translation tools, though using these tools also involves compromise and loss of sonic detail.

According to environmental governance scholar Karen Bakker, digital technologies reveal “the vast extent of sonic communication across the natural world.”<sup>292</sup> She also argues that where technology can fail is the interpretive listening and resulting dialogue component. She writes that relational listening “is a form of dialogue. In contrast, digital listening—as conventionally practiced by Western scientist[s]—is an enhanced form of eavesdropping.”<sup>293</sup> The artists discussed above counter this by involving themselves in the listening process alongside recording technologies. They add a level of reciprocity by letting playback sounds direct their movements, actions, and any resulting sounds they contribute.

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<sup>291</sup> Matthew Hall, *Plants as Persons: A Philosophical Botany* (Albany, NY: State University of New York Press, 2011), 162.

<sup>292</sup> Bakker, *The Sounds of Life*, 3.

<sup>293</sup> Bakker, *The Sounds of Life*, 77.

This resonates with ideas by philosopher Donna Haraway. She connects select technologies and humans, asserting, “The machine is us, our processes, an aspect of our embodiment,” understanding technologies as tools to integrate new relations.<sup>294</sup> Her concepts of cyborgs and companion species blur boundaries and bring together humans, the more-than-human world, and machines,<sup>295</sup> applicable to the works discussed above. The case studies create what Haraway terms “contact zones” where species and beings can interact, sometimes aided by recording and playback technology.<sup>296</sup> In acts of listening, this is partly because, as Alarcón Díaz describes it, “Technology accelerates processes of connection [and] increases our awareness.”<sup>297</sup> If technologies are used consciously and ethically, such sonic awareness could enable mutual relationships and companion species to form.<sup>298</sup> This also relates to how certain Indigenous epistemologies sanction ethical relationships of mutual respect with human and nonhuman kin.<sup>299</sup>

For example, in both early and later developments of Alarcón Díaz’s INTIMAL, recording and playback technologies facilitate listening across time and space. The early version relied on audio recording equipment, speakers, computer programs, and the

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<sup>294</sup> Donna J. Haraway, “A Cyborg Manifesto,” in *Manifestly Haraway* (Minneapolis, MN: University of Minnesota Press, 2016), 65, 33.

<sup>295</sup> Donna J. Haraway, “The Companion Species Manifesto,” in *Manifestly Haraway* (Minneapolis, MN: University of Minnesota Press, 2016), 96.

<sup>296</sup> Ayana Young, host, *For the Wild*, podcast, episode 269 encore, “Donna Haraway on Staying with the Trouble,” January 19, 2022, <https://forthewild.world/podcast-transcripts/donna-haraway-on-staying-with-the-trouble-encore-269>.

<sup>297</sup> Alarcón Díaz, interview by author.

<sup>298</sup> Sarah Vincent, “Interspecies Intersubjectivity: On Its Possibilities and Limitations,” *Southwest Philosophy Review* 31, no. 1 (2015): 140.

<sup>299</sup> Lewis et al., “Making Kin with the Machines.”

internet to enable simultaneous telematic performances in London, Oslo, and Barcelona. In the app, sensors detect movements, sonifying them as breath, triggering the replay of migration stories, and recording participants' voiced responses. The software links the movements, breathing, memories, and voices of both current participants and the original migrant women. There is an element of the technology assisting communication, and INTIMAL broadens the communication across spatial and temporal distances. As technologies and research advance, Alarcón Díaz may choose to update the INTIMAL app accordingly or find other ways to connect the aspects of breath, movement, and voices.

Madsen's *The Voices of Stones* uses contact mics, effects pedals, a mixer, and speakers to amplify the movement of human and stone performers. The sounds picked up are of the stones themselves and the components they interact with, like the metal sheets, fabric, floor, and Madsen's body. The delay, reverb, and looper pedals alter the sounds to be repeated for listeners to engage with them. The metal sheets serve as a conduit of stone sounds, sonifying relationships and interactions of participants and materials. The effect pedals multiply sonic events and expand their duration, allowing listeners to hear sounds and their transformations multiple times, and to also potentially tap into the slower timescales of rocks. Future iterations might benefit from the use of different or additional speakers and rely more on the movement of the contact mics or audiences than the movement of stones.

Kite's *Listener* implements machine learning through an accelerometer woven into her braid, which controls a Lakhóta compass and, based on the braid's movement, plays sound from a distorted script about a dystopian future. Both impacting and taking

direction from the software sonically and visually help her create a dissociative state from herself in spiral form, and she also respects this practice, viewing machine learning as engagement with the more-than-human world. She grew this practice to develop a more ethical, collaborative composition method with computer software and other beings.

Technologies like microphones, processing software, speakers, and the internet allowed me to experience and analyze these pieces and performances from a different location and time. However, this situation also limited my experience of the sound since the compressed and remediated sounds are a representation of the performances different than what I would have experienced in a live setting. Further, “[o]ne of the key advantages that humans have over microphones is the ability to direct our listening in real-time.”<sup>300</sup> Certain intricacies are lost in technological translation, but the process also opens possibilities for new listenings, understandings, applications, and contexts.<sup>301</sup>

### The Significance of Dreaming

Like technologies, dreaming can similarly unlock possibilities. In *INTIMAL*, *The Voices of Stones*, and *Listener*, the movement of human participants activates the voice of others and vice versa. Through the works discussed above, the artists direct attention to the stories of those often unheard, thanks to the recording and playback technologies which act as translation tools. However, in Alarcón Díaz and Madsen’s text pieces for *A Year of Deep Listening* and in the creation stages of Kite’s *Wógligleya (Thunjkášila Čečiyelo)*, the voices are heard via dreams and imagination rather than microphones,

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<sup>300</sup> Garth Paine and Celia Yang, *The Environmental Listening Field Guide* (Tempe, AZ: Arizona State University, Tempe, 2024), 32.

<sup>301</sup> See François J. Bonnet, *The Order of Sounds: A Sonorous Archipelago*, trans. Robin Mackay (Falmouth, ENG: Urbanomic Media, 2016).

software, and speakers. In some ways, this mirrors Oliveros's experience in 1953 in which the tape recorder served as a catalyst for increased awareness to sound and listening, an awareness she then explored in *Deep Listening* by listening to dreams and recalling dream sounds.

For Alarcón Díaz and Madsen, the Deep Listening modalities provide a framework for increased sensitivity to more-than-human environments without the need for software processing or amplification, using listening, dreaming, and moving to bring participants into close encounters with their sonic surroundings. Kite also turns to dreams for her artistic practice, though she integrates them more with and as technology. For example, in *Listener* she used digital technologies as a means to imagine (or dream) futures and connect with the spirit world, and she co-created the graphic score for *Wógligleya (Thunjkášila Čečiyelo)* and its resulting sounds directly from dreams. She also employed digital technologies for the score animation and amplification of Indigenous voices.

Dream research encompasses many camps of thought and has been controversial, perhaps because of its levels of unknowability, like Kite invites into her work. She frames dream awareness as a mode of listening to the unknowable. As consciousness researcher Imants Barušs states, "Dreaming provides an opportunity for the emergence of another, more intuitive, mode of knowing."<sup>302</sup> This opportunity to think or listen differently also plays into imagining various futures and/or ways of being. Particularly in justice activism and environmentalism, the act of dreaming possible worlds can help those worlds

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<sup>302</sup> Imants Barušs, "Dreams," in *Alterations of Consciousness: An Empirical Analysis for Social Scientists* (Washington, DC: American Psychological Association, 2003): 92.

materialize, and “imagination provides the alternatives to reality that can motivate a reordering of the way things currently exist.”<sup>303</sup> By engaging a “radical imagination,” we can explore possibilities and boundaries of the more-than-human world.<sup>304</sup> Part of the futuring process involves reflecting on the past and present,<sup>305</sup> often collapsing timelines or evoking a sense of timelessness, as the pieces discussed also suggest. In this way, imagination can play a critical role in propelling environmental and social change. Not only dreams but the whole Deep Listening practice accommodates such efforts, as Ione recalls that Oliveros would describe Deep Listening as “a process of not knowing,” allowing for exploration.<sup>306</sup> Reiley also conveys this by emphasizing Deep Listening’s “continual potential ... as a transformative practice, both personally and socially, reminding us of the essential role listening plays in fostering genuine understanding, compassion, and healing in today’s world.”<sup>307</sup>

Deep Listening “troubles the self/world distinction so central to settler ideologies,”<sup>308</sup> and dreams specifically can further inform such a repositioning. As Stephanie Loveless and Freya Zinovief summarize, “IONE describes Deep Listening as a

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<sup>303</sup> Michele-Lee Moore and Manjana Milkoreit, “Imagination and Transformations to Sustainable and Just Futures,” *Elementa* 8, no. 1 (2020): 3.

<sup>304</sup> Ivy Scurr and Vanessa Bowden, “‘The Revolution’s Never Done’: The Role of ‘Radical Imagination’ within Anti-Capitalist Environmental Justice Activism,” *Environmental Sociology* 7, no. 4 (2021): 317.

<sup>305</sup> Kari Marie Norgaard, “Whose Energy Future? Whose Imagination? Revitalizing Sociological Theory in the Service of Human Survival,” *Society & Natural Resources* 33, no. 11 (2020): 1440.

<sup>306</sup> “Stephanie Loveless in Conversation with IONE and Ashish Ghadiali,” posted April 29, 2024, by Radical Ecology, Vimeo, <https://vimeo.com/940849538>.

<sup>307</sup> Reiley, e-mail message to author.

<sup>308</sup> Robinson, *Hungry Listening*, 244.

transformative practice that, through its insistence on the boundless wisdom of the body and of dream, has the capacity to unsettle colonial logic and rewild our creative capacities.”<sup>309</sup> Ione values holding space when listening to and in dreams, opening for inclusion, and expanding to understand time as multiple and simultaneous. As discussed previously, Ione teaches that awareness of dreams helps humans address imbalance in various settings. Living with the dream may also allow humans to encounter, include, and listen with the more-than-human world. Oliveros too hoped for healing through listening to all, and her philosophies and actions can be read as activism.<sup>310</sup> These same approaches could be applied in present-day activist movements to increase accessibility for various marginalized communities.

The artists discussed here share significant similarities in their listening journeys. Each deeply engaged with sounds and/or sonic environments growing up and then expanded their listening and awareness of sounds through recording and playback technologies. Through these tools, they came to better know themselves and others. For Alarcón Díaz and Madsen, the Deep Listening practice and training highlighted moving and dreaming as important means to connect with humans and other-than-human beings. Kite likewise incorporates dreaming to communicate with the sometimes unknowable more-than-human realm. Taken together, their work shows creative ways of expansive listening.

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<sup>309</sup> Loveless and Zinovief, “Listening to Our Listening,” 38.

<sup>310</sup> Kerry O’Brien, “Listening as Activism: The ‘Sonic Meditations’ of Pauline Oliveros,” *New Yorker*, December 9, 2016; “Stephanie Loveless in Conversation with IONE and Ashish Ghadiali,” posted April 29, 2024, by Radical Ecology, Vimeo, <https://vimeo.com/940849538>; “Deep Listening and Radical Ecology,” posted November 1, 2024, by Radical Ecology, Vimeo, <https://vimeo.com/1025494890>.

## CHAPTER 6

### CONCLUSIONS: DEEP LISTENING FUTURES

In the introduction to this dissertation, I asked a series of questions: how are sound and listening historically understood? What can humans learn from listening to and with other beings? How are artists contending with these topics in dialogue with other entities? I then showed the historical, cultural, and aesthetic contexts of the Deep Listening community through research methodologies and concepts drawn from the fields of acoustic ecology, sound studies, ecomusicology, and experimental music studies. By reviewing these contexts of Deep Listening and by providing readings of select creative examples rooted in listening, we discovered that, since the 1960s, a growing number of artists inspired by various philosophies and movements have manifested heightened body and environmental awareness in their creative practices via consideration of breath, movement, kinship, and dreams. Pauline Oliveros and her collaborators were instrumental in laying the groundwork for a now continuously sprawling international network of skillful and caring listeners. The culminating case studies of Ximena Alarcón Díaz, Tina Mariane Krogh Madsen, and Kite showcase different ways in which current artists have also broadened their and others' sonic awareness and have connected to the more-than-human world through sound and listening.

With this dissertation research, I expanded on existing musicological discussions of the Deep Listening practice and the work of Oliveros by highlighting the dreaming and moving modalities. While Oliveros is often heralded as the sole pioneer of the Deep Listening practice, I have shown how Deep Listening grew from a wide array of inspirations and collaborations, as with the ♀ Ensemble, Deep Listening Band, Ione,

Heloise Gold, and the many members of the Deep Listening Institute and Center for Deep Listening. The significant influence of Ione on the dream modality and of Gold on the movement modality is often absent in the musicological coverage of Oliveros and Deep Listening. However, as has been demonstrated, the Deep Listening practice is more holistic and multifaceted thanks to Ione and Gold, and recognizing all Deep Listening modalities grants a deeper understanding of the practice.

I found that dream awareness especially can contribute to a richer overall listening experience for Deep Listening artists, participants, and audiences. As Ione writes, “Certainly, when we enter the realm of dreams, we begin to expand our understanding of Reality. We enter the multidimensional world of ‘the dream of reality and the reality of the dream’.”<sup>1</sup> Following this, current artists within the Deep Listening community and certain Indigenous traditions rely on dreaming as an essential aspect of their work in sound. In the specific cases of Alarcón Díaz, Madsen, and Kite, each notably turned to dreaming in place of and alongside their use of audio technologies for sensitive listening.

Their work points to how dreaming is one method to listen to and with voices of the more-than-human world. This cultivation of environmental awareness underscores Deep Listening and the Indigenous listening practices in *dadirri* and *Lakḥóta* traditions, and more work should be done to explore connections with other traditions and in other contexts. Future researchers may study how the more-than-human world is reflected through sound in scores, performances, and exercises of other artists who put the greatest emphasis on the act of listening. More readings of the pieces offered in this dissertation, ideally based on in-person attendance of performances, would broaden insight into such

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<sup>1</sup> Carole Ione, *Listening in Dreams* (New York, NY: iUniverse, Inc., 2005), 8.

works. Further coverage of the dynamics in collaborations and group listening could also enrich the musicological discourse on current Deep Listening practices.

A call for work within the worldwide Deep Listening community remains as well. In-depth oral history interviews with Deep Listening participants and teachers over extended periods of time could help track how their listening practice impacts their lives in measurable, tangible outcomes. However, Deep Listening certificate holders are generally concentrated in the United States and Europe (fig. 17), and this fact shows limitations regarding recognition of the practice in other parts of the world.<sup>2</sup> A need for research about Deep Listening in other areas and across class lines persists, and exploration as to why people are unable or choose not to adopt the practice would also contribute to a thorough understanding of the practice.

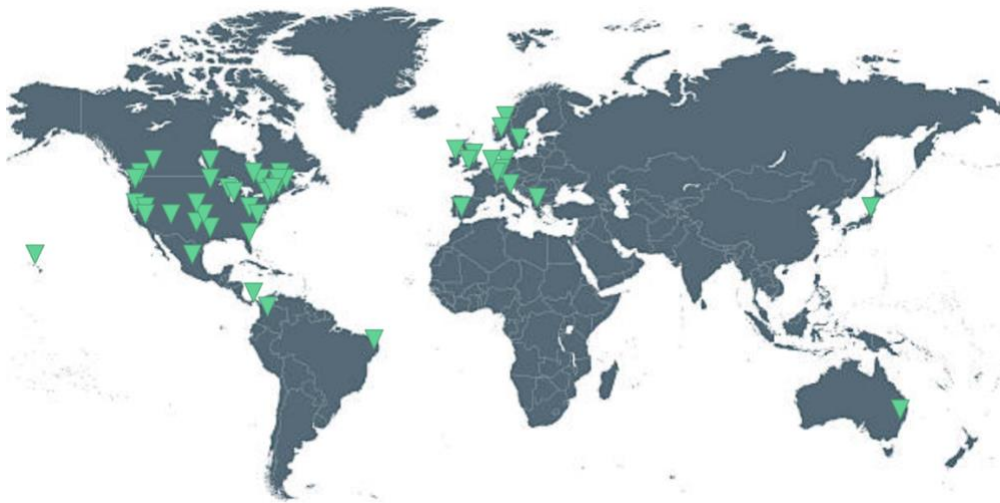


Figure 17. World map showing locations of Deep Listening certificate holders.

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<sup>2</sup> “List of Certificate Holders,” The Center for Deep Listening, 2025, <https://www.deeplistinging.rpi.edu/list-of-certificate-holders>.

To this latter point, critiques from Indigenous artists and scholars like Kite offer insight into these issues, and seriously considering these critiques is worth pursuing further. The Center for Deep Listening intentionally engages in conversations with Indigenous community members and has made space for Indigenous artists to give talks and publish works, as in the examples of Kite’s “Nonhuman Futures” lecture and Candice Hopkins and Raven Chacon’s text score “The Dispatch” in *A Year of Deep Listening*.<sup>3</sup> In Deep Listening intensives, facilitators openly discuss any concerns that may arise, including questions about appropriation or lineage in the practice, and, importantly, they rely on the tenets of Deep Listening to navigate those conversations.<sup>4</sup> Familiarity with the practice also provides the means to critically inspect bias and privilege and respond sensitively to such critiques. In short, the plurality of Deep Listening exercises may supply the groundwork to further address Indigenous criticisms of the existing state of the practice and allow for the development of new approaches to resolve these issues.

Listening is necessary for issue resolution regardless of discipline or situation. In this dissertation, I emphasized how sound and listening can be used in various settings to promote awareness of self and others. Deep Listening

remains fundamentally about connection—connection to self, others, the environment, and broader sonic ecologies. While this essence has stayed consistent, there’s been an evolving emphasis on social engagement and ecological consciousness, reflecting broader global conversations.<sup>5</sup>

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<sup>3</sup> For a discussion of this piece in the context of Deep Listening, see Stephanie Loveless and Freya Zinovieff, “Listening to Our Listening: Deep Listening in Critical Sites,” in *Situated Listening: Attending to the Unheard*, ed. Stephanie Loveless, Tullis Rennie, Morten Søndergaard, and Freya Zinovieff (London, ENG: Focal Press, 2025), 40–44.

<sup>4</sup> Tom Bickley, interview by author, May 14, 2025.

<sup>5</sup> Michael Reiley, e-mail message to author, June 17, 2025.

Increased sonic awareness can also necessitate a meditative presence for inner listening and self-reflection, and the artists discussed above illustrate how introspection has impacted their practice. Through my own self-reflection and study of acoustic ecology and Deep Listening, I learned how listening to others means recognizing them and discovered that listening can create or deepen ties and connections with beings and spaces. Sensitive listening over time may also reveal what has changed in a sonic environment and could spur a sense of increased responsibility for the physical space and its inhabitants.<sup>6</sup>

Humans often have strong emotional ties to certain sounds: the voices of loved ones, the sounds of a neighborhood, internal chatter, a favorite song, a dawn chorus, etc. If rooted in positive experiences, these sounds may evoke feelings of connection with spaces and/or the sound sources. For negative sonic memories, adapting listening to rewrite (or re-hear) the narrative around certain sounds or shifting focus to different soothing sounds could have healing effects. Indeed, embodied practices, knowledge, and imagination, can all influence care for others.<sup>7</sup> And although practices of care vary culturally, virtues of care are based on attentiveness to, responsiveness to, and respect of others,<sup>8</sup> which are also key elements cultivated in and by Deep Listening. The Deep Listening practice creates opportunities for people to recount and highlight their unique

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<sup>6</sup> Garth Paine and Celia Yang, *The Environmental Listening Field Guide* (Tempe, AZ: Arizona State University, Tempe, 2024), 18.

<sup>7</sup> James Thompson, *Care Aesthetics: For Artful Care and Careful Art* (New York, NY: Routledge, 2023), 63. See also Joan Tronto and Berenice Fisher, "Toward a Feminist Theory of Caring," in *Circles of Care: Work and Identity in Women's Lives*, ed. Emily K. Abel and Margaret K. Nelson (Albany, NY: State University of New York Press, 1990), 34.

<sup>8</sup> Daniel Engster, "Rethinking Care Theory: The Practice of Caring and the Obligation to Care," *Hypatia* 20, no. 3 (2005): 54–56.

listening experiences, and thus may meet John Drever's proposition for work that "savours, not denies, the spectrum of hearing that humanity has to offer," and should be extended to the sonic more-than-human world.<sup>9</sup>

As we are continually confronted with worldwide environmental concerns and challenges, meaningful action is crucial. What if the answer is listening? Listening to ourselves, each other, and the more-than-human world offers one step toward informed action. Deep Listening is a way to engage in the world responsibly, drawing on the listening, dreaming, and moving modalities to cultivate relationships with ourselves and other beings. "To be all ears"<sup>10</sup> and give attention to sound is a call to foster sonically receptive ways of being in the world. In other words, "To listen is to pay attention and to pay attention is to be poised to act."<sup>11</sup>

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<sup>9</sup> John Levack Drever, "'Primacy of the Ear' – But Whose Ear?: The Case for Auraldiversity in Sonic Arts Practice and Discourse," *Organised Sound* 24, no. 1 (2019): 93.

<sup>10</sup> Jean-Luc Nancy, *Listening*, trans. Charlotte Mandell (New York, NY: Fordham University Press, 2007), 4.

<sup>11</sup> Dylan Robinson, *Hungry Listening: Resonant Theory for Indigenous Sound Studies* (Minneapolis, MN: University of Minnesota Press, 2020), 248.

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