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AMBIENT SOUND AND RELATIONAL SONGWRITING IN
PLACE-BASED EDUCATION

A dissertation presented

by

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Abstract

This dissertation utilizes qualitative sound methods to explore the ways in which sound and songwriting create place and inspire interspecies engagement in place-based classrooms. Drawing inspiration from decolonial theory, multispecies theory, and the environmental humanities, this dissertation adds to a growing body of research in the field of sound studies that centers sound as an embodied form of knowledge in educational settings. The fieldwork site for this research project was a place-based pre-kindergarten classroom where the researcher utilized tools and methods of sonic geography, sonic ethnography, and research-creation to explore the importance of sound and song in one experiential education setting.

The discussion of this fieldwork is divided into three chapters. The first describes the ways in which institutional and societal pressures, student needs, the built environment of the school, and the forest classroom inspire educational rhythms, sonic ecologies, and placemaking. The second details how listening differently to forest encounters between students, a large rock, and a succession of field mice inspired interspecies perspective-taking and the arts of wondering about the entanglement of human and more-than-human ecologies. The final chapter focuses on a research-creation songwriting project with pre-kindergarten students, community musicians, teachers, and critters in the forest classroom. This chapter explores the idea of place-based songs as multispecies *sonic fables*, a sounded version of Donna Haraway's "speculative fabulation," which encourage rituals of attunement and creativity for relational and environmentally just futures amongst teachers and young students.

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INTRODUCTION ∞ SONIC INQUIRY (A MOTIVATING EXAMPLE)

In 2020 I visited a small, rural, public primary school in Vermont to learn about how teachers, students, and administrators there were pursuing a decade-long shift towards place-based education during the COVID-19 pandemic. I was mostly interested in teachers' experiences in respect to educational policy and pedagogy, and I spent some peaceful hours in the woods one bright October day with a few classes, observing students and recording the sounds of place-based education. That morning, some of the fourth-grade students rushed through a few worksheets so they could work on their forts which were sprawling, spindly structures made of fallen limbs that required advanced teamwork and tool-work to build. Later that day, I observed some kindergarten students as they played in an imaginary Chinese restaurant in a mud kitchen during some free play between more structured activities. Listening back to those sound recordings several years later, what strikes me is each teacher's specific call to students to bring them back together after free activities. The school's librarian, for example, sang a few notes of an unresolved melody that students would complete and resolve on cue. To call her students back together, the kindergarten teacher needed something a bit more powerful: [a crow call, which students would imitate as they stopped what they were doing to run off to the group's established meeting point in the woods.](#)¹ I never learned how this teacher chose a crow sound, but it seemed to fit quite well for her classroom. Crows are known for their distinctive, loud, call, as well as their diverse vocalizations. It is a sound that most New Englanders are familiar with from an early age, since crows are widespread in many landscapes. It is also a sound that teachers and young students can replicate loudly and

¹ <https://drive.google.com/file/d/1h0UDxFKipgiPYiWTP5rSbbHVfe5Kqpnr/view>.

easily, which are requirements for calling back a group of free-ranging five- and six-year-olds. Practical as it may be, it also signals to students an encouragement for a deeper emplacement with the forest.

This dissertation explores the world of experiential place-based education and human-environment relationships through research projects focused on listening and participatory sound design. In this introduction, I start by meditating on some connections between sound, experience, and education as I describe a participatory sonic inquiry pilot project that I facilitated (with students and teachers as co-researchers) in April of 2023. While this pilot project lasted just one week, in theory and methodology it contains the seeds of the larger project that forms this work and therefore provides an entry point for this dissertation's mix of ideas around sound, nature, education, and human experience. Sound and listening are critical components of education and learning, and speech and the classroom management of sound and conversation are central to the ways in which humans communicate, share, and create experiential knowledge about themselves and the world around them. This communication, listening, and classroom interaction happens in culturally specific and ever-evolving ways, and today, experiential educators have become sensory innovators who give students the agency and tools to construct an epistemology built on their embodied experiences of moving through the world, which includes how we experience the sonic in everyday life. Experiential education is a model of education where students reflect on the sensory phenomena of lived experience, theorize how positionality affects the politics of being and embodied knowing, and construct new ideas about how to engage with the world around them. John Dewey is regarded as the founder of this approach, which emerged from his dissatisfaction with

what he calls “the traditional scheme,” defined as a curriculum designed by adults imposed “from above and from outside.”² For Paolo Freire, another educational philosopher who challenges the status quo of education, this “traditional scheme” (what he calls the “banking” approach to education) is built primarily on a set of narrative/listening practices. He writes, “A careful analysis of the teacher-student relationship at any level, inside or outside the school, reveals its fundamentally narrative character. This relationship involves a narrating Subject (the teacher) and patient, listening objects (the students). The contents, whether values or empirical dimensions of reality, tend in the process of being narrated to become lifeless and petrified. Education is suffering from narration sickness.”³

Using qualitative and participatory sound methodologies, I aim to explore and question this teacher-centered “narrative character” of education to explore what sound and the senses can do to help us consider new ways of thinking about teaching and learning particularly about human relationships to places and environments. If we take seriously Freire’s argument that traditional education has historically been about “patient, listening objects,” it follows that transforming education requires a radical shift in listening for teachers, students, administrators, and educational researchers. I tackle this transformation through several distinct phases of research framed within the field of educational sound studies. The first was undertaken as a pilot study in a place-based classroom in Vermont and forms this introductory chapter. As I describe below, in this “sonic inquiry” project, we (students, educators, and I) used a music creation approach to

² John Dewey, *Experience & Education* (Collier Books, 1938/1974), 18-19.

³ Paolo Freire, *Pedagogy of the Oppressed* (The Continuum International Publishing Group, 1970/2005), 71.

explore sonic expectations and practices in a primary school place-based educational program to think about what sonic inquiry can tell us about how young people learn about and connect to their environments. This project builds on recent research in the emerging field of educational sound studies, which raises the notion that educational sonic and sensory environments in the US are the product of white, cis-hetero, middle-class normative practices.⁴

The main project, which occurred in spring of 2025, was a participatory songwriting project with a place-based pre-kindergarten class at the same school. My relationship with this classroom started in May 2023 (with a different group of students), when I was invited by the place-based pre-kindergarten teachers of this class to help turn their students' song lyrics into short songs. (The project in 2023 had no research component but arose from the various sonic inquiry projects I have been involved in at this school in the past four years, as well as my local connections as a songwriter and community concert organizer). These four- and five-year-old songwriters proved to have creative ideas about the place-based classroom and world they experienced throughout the year, and at the conclusion of the project the teachers had begun to incorporate many of these songs into their daily activities. (By the end of the school year, a few of these songs had started to spread beyond the pre-kindergarten class into the older grades, most notably a song about a locally famous snapping turtle who eats hot dogs). In this project, I utilized the tools of sonic ethnography, sonic geography, and research-creation as I joined students and their teachers to compose songs about the ways these young students

⁴ Bessie P Dernikos, "Tuning into 'Fleshy' Frequencies: A Posthuman Mapping of Affect, Sound, and De/colonized Literacies With/in a Primary Classroom," *Journal of Early Childhood Literacy* 20, no. 1 (2020): 141-142. <https://doi.org/10.1177/1468798420914125>.

interact with their environments. In both the pilot project featured in this chapter and the main research phase of this dissertation, I focused on the types of human-environmental relationships, ideas, and connections that are made when place-based educational students and teachers channel learning about the forest environment through practices of listening and song composition. In this dissertation, I explore how songwriting activities can inspire students to reflect on what they have learned in class over the past year and how arts-based approaches to learning with nature help students feel connected to their environment and its processes.

My goal in these projects was to contemplate how thinking in and through sound is both ubiquitous in our lives and educational settings (even for Deaf people), and yet often overshadowed by ocular, textual, and numerical forms of inquiry, signification, and learning. Educational sound studies scholars are creating a canon of literature on the ways in which teachers and administrators exercise power through sound and teach unwritten norms about sound, silence, and affect as they manage their classrooms.⁵ In the US, student behaviors depend on a certain set of sonic norms intrinsic to white cultures, and it is often students from families and cultures outside the white middle-class that struggle the most.⁶ There is also a growing movement around decolonial approaches to place-based education in the US, which focuses on creating pedagogy that strengthens the relationship between students and their environments. This dissertation brings these

⁵ Michael Gallagher, "Sound, Space and Power in a Primary School," *Social & Cultural Geography* 12, no. 1 (2011): 47-61. <https://doi.org/10.1080/14649365.2011.542481>.

⁶ Signithia Fordham, "'Those Loud Black Girls': (Black) Women, Silence, and Gender 'Passing' in the Academy," *Anthropology and Education Quarterly* 24, no. 1 (1993): 3-32. <https://doi.org/10.1525/aec.1993.24.1.05x1736t>.

threads together to explore understandings of power, sound, nature, and experience in the classroom through participatory sonic classroom design.

Defining Place, Place-based Education, Environment, and Sound(scape)

Before I proceed further, I want to provide basic definitions for the major phrases and terms used throughout this dissertation. There are now dozens of different names and frameworks to describe the types of education that happens outdoors in the US in recent years. Phrases like outdoor education, environmental education, experiential education, nature-based education, and place-based education are the most common, and they each have overlapping meanings and pedagogies. Guided by Lucie Sauvè's definitional work on environmental paradigms, the theoretical frameworks of my research, and the pedagogical approaches used by teachers at the fieldwork site, in this dissertation I primarily use the term place-based education which sits within what Sauvè calls a "humanist/mesological current" of environmental education, with "mesology" referring to the middle ground between nature and culture, a concept I will meditate on throughout this work.⁷ Sauvè defines the word "environment" in line with this framework as "a place of existence, of living—a habitat—with all its historical, cultural, political, economic, emotional, and other aspects...Environment as a "heritage" is not simply natural; it is also cultural."⁸ The term place-based education pays homage to this framework as an education of the ways in which human and more-than-human cultures are entangled to create place, which Escobar describes as "more an event than a thing...characterized

⁷ Lucie Sauvè, "Currents in Environmental Education: Mapping a Complex and Evolving Pedagogical Field," *Canadian Journal of Environmental Education* 10, Spring (2005): 17.

⁸ Sauvè, "Currents in Environmental Education," 17.

more by openness than by a unitary self-identity.”⁹ As I will demonstrate in the final chapters of this dissertation, the type of pedagogy delivered at the pre-kindergarten classroom where this research occurred is focused equally on the ways in which students cultivate practices of care for both the human and more-than-human educational stakeholders, and the ecology of educational sounds I describe are indebted to these encounters with the more-than-human along with complex discourses and histories around environmental injustice, philosophical expectations around what it means to be a child, and institutional educational directives and mandates. In both this pilot study and the main studies that follow, I detail a school where the natural and the cultural are inextricably entangled to create place and place-based education.

Sound in environment, what R. Murray Schafer called a “soundscape,” is a natural extension of these definitions of environment and place.¹⁰ Schafer’s term soundscape is an obvious nod to the word landscape, derived from the Frisian word “landschop” which originated among North Sea sailors in the Netherlands and Germany to describe “shoveled land.”¹¹ While the term originally referred to human agricultural land making in coastal areas, “Around 1600, literate Englishman began writing the word as landskip or landskep to identify paintings representing views across water toward land.”¹² In this way, landscape became not simply a place made through shovels and hands, but also a place made through perspective, oil paint, and canvas. Stilgoe notes that

⁹ Arturo Escobar, “Culture Sits in Places: Reflections on Globalism and Subaltern Strategies of Localization,” *Political Geography* 20 (2001): 143. [https://doi.org/10.1016/S0962-6298\(00\)00064-0](https://doi.org/10.1016/S0962-6298(00)00064-0).

¹⁰ R. Murray Schafer, *The Soundscape: Our Sonic Environment and the Tuning of the World* (Destiny Books, 1994), 3-12.

¹¹ John R. Stilgoe, *What is Landscape?* (The MIT Press, 2015), 2.

¹² Stilgoe, *What is Landscape?*, 4.

the suffix “-scape” is now added to words of all kinds which “torture” the original meaning of the word: “Cityscape, townscape, streetscape, brainscape, hairscape, cloudscape, aircscape, hardscape, bedscape,” and likewise landscape is used in other expansive ways, such as “moral landscape and financial landscape.”¹³ Regardless of these expansions, the word “landscape” today is tied to our ideas of how places look in paintings and reflection, and how we shape them—into gardens, pastures, public spaces, wildernesses, and more. To me, Schafer’s invention of the term soundscape hews closely to the original history of the word with all its connotations of human-created place and artistic perspective, but directed towards the sound, not the visuality of a place. Schafer’s soundscape is similarly focused on a set of practices for listening to, composing with, and altering soundscapes according to a certain set of cultural ideals derived from experiential interaction with place. A sound environment is therefore an assemblage of all the sonic actors—including everything that makes sound (humans, critters, weather, geology) and every material that influences sound (architecture, rocks, machines, forests, etc.)—*and* our human histories and cultures of listening, politics of noisemaking, technologies of sound reproduction, creative compositional impulses, and individual ways of hearing and thinking about sound.

Sonic Inquiry

In this introductory chapter, I will focus on a participatory, place-based sonic inquiry project undertaken in collaboration with 3rd grade students, their teacher, and several parent volunteers at a public school in Vermont in April 2023. This pilot project,

¹³ Stilgoe, *What is Landscape?*, 7.

which is a motivating example for the main research projects undertaken for this dissertation, arose from a collaboration with a Vermont teacher and her students, and was designed to augment the pre-existing curriculum for this class as well as draw from my skills and interests as a musician, composer, and researcher. Over the course of one rainy, cool, spring week, I spent the morning of each class day teaching students about sound and listening while observing and making sound recordings of the activities that I co-facilitated with their teacher. In the final two sessions of the week, students created their own sound art projects. These student-made recordings also contributed to the data set for this project.

Throughout the first half of the school year, students in this class had been regularly visiting a “sit spot” in their place-based classroom, which had become central to their place-based work throughout the year. The sit spot is a common place-based education activity where students choose a location in the forest and sit, often silently, in various seasons and conditions throughout an educational unit or academic year. In this low-cost and easily administered activity, students are asked to observe and document the conditions around them (usually in a written journal), including animals, trees, plants, and fungi in different seasons and weather. Sit spots are often integrated into larger units on literacy, social studies, the natural sciences, or the arts, and are a simple way to get children out into commonly accessible outdoor settings (including playgrounds, tree stands, and athletic fields) around schools. The sit spot is a prominent and powerful example of the type of embodied and sensory learning that often takes place in place-based educational settings and therefore became a starting point in our lesson planning. Accordingly, the classroom teacher and I focused on expanding these sensorial

engagements through the design of a short unit on sound and listening. The result was a participatory sound art project that was designed to give students tools, creative options, and agency to explore their space without trying to limit how explorations of sound quickly lead to a broader array of multisensory experiential learning opportunities and experiences.

My goal in describing this sonic inquiry project (as the students called it), is to show how listening and sound exercises can expand the ways in which students, teachers, and parents think about and approach nature, place-based education, and inspire age-appropriate creative thinking about climate change and interspecies justice. In doing so, I also show how sound and sensory-based activities have important implications for primary education in general, specifically the ways in which embodied and experiential learning activities more fully engage and inspire student learning. Along the way I will highlight and hint at theories, literature, methodologies, and place-based practices that I explore more fully in the following chapters and pages of this dissertation to introduce how human educational experiences of sound and nature can contribute to students' sense of place.

Theory: Sound and the Unsettling of the Nature/Culture Dualism

In addition to providing a foundation for the design of this sonic inquiry project, the sit spot is also an interesting entry point for interrogating some of the principles and designs of place-based education. Throughout this dissertation, I consider approaches to place-based education that can inspire or inform creative ways of thinking about how humans relate to their surroundings, and how human culture is co-constituted by the natural world (and vice versa), rather than separate, unique, or elevated above it. Val

Plumwood writes that “The hyperbolised opposition between humans and the non-human order I call human/nature dualism is a Western-based cultural formation going back thousands of years that sees the essentially human as part of a radically separate order of reason, mind, or consciousness, set apart from the lower order that comprises the body, the woman, the animal and the pre-human.”¹⁴ As I will delve into more deeply throughout this dissertation, decolonial educational approaches to place-based education seek to interrogate, subvert, and unsettle this colonial dualism and instead practice modes of teaching and learning to understand how humans, non-humans, and matter interact in complex and dynamic eco-cultural systems. For Plumwood much of the environmental challenges we face amount to a “failure to understand our ecological situation, being out of touch with what is happening to our ecological world and with ourselves as ecological beings.”¹⁵ This dualistic divide has for several decades been established as a primary point for the epistemic decolonization of Western approaches to place and the environment. The West/Global North owes its wealth to the extraction and exploitation of natural resources and human labor, and the philosophical idea of the separation of nature and culture presupposes a justification for this extractive approach. One of the questions that motivated this sonic inquiry project and the project that follows in this dissertation is: What tools and philosophical ideas might we utilize in the spheres of education (place-based in particular), but also politics, the arts, community organizing, and more to challenge this epistemic model? How can we teach our children and inspire our communities to have more responsible and reciprocal relationships with their

¹⁴ Val Plumwood, “Nature in the Active Voice,” *Australian Humanities Review* 46 (2009): para. 20. <https://australianhumanitiesreview.org/2009/05/01/nature-in-the-active-voice/>.

¹⁵ Plumwood, “Nature in the Active Voice,” para. 19.

environments? Or perhaps more importantly for this work, what can our children teach us about environmental relationships? How can we inspire hope and optimism for the environment while also recognizing the challenges ahead?

Scholars in the field of environmental humanities have argued that interdisciplinary thinking, research, and creative work is needed to address local and global environmental problems and injustices, such as the massive loss of biodiversity and the forced migration of people most vulnerable to the effects of climate change. In response, there is a growing corps of artists, activists, scientists, academics, practitioners, and community organizers working on exciting new collaborative climate justice projects. Anna Tsing writes that we need to cultivate an “arts of noticing,” our relationality with these systems, which has led her to conceive of ecological relationships as a “polyphonic assemblage.”¹⁶ Polyphony is the musical term for several melodies which are unique, but performed together (typically in the same key and tempo), and Tsing envisions that our ecological systems work in the same way: in some sense independent of each other, but woven together by place, movement, space, and time. Plumwood has argued that by “re-animating” the world through new ways of understanding these relationships, “we become open to hearing sound as voice, seeing movement as action, adaptation as intelligence and dialogue, coincidence and chaos as the creativity of matter.”¹⁷ Following Tsing and Plumwood, the goal of this sonic inquiry project was not only to work on hearing the importance of sounds as if they were a language unto themselves, but to see (and hear) what happens when young learners and

¹⁶ Anna Lowenhaupt Tsing, *The Mushroom at the End of the World: On the Possibility of Life in Capitalist Ruins* (Princeton University Press, 2015), 24.

¹⁷ Plumwood, “Nature in the Active Voice,” para. 47.

educators join in the chorus of nature as we listen and compose our way towards new understandings of our ecological connections.

In US schools, silence has historically been heard, uncritically, as a sort of blank slate and equalizing force for students to attend to their studies and learning within the core academic disciplines of literacy and math.¹⁸ This emphasis on silence, both in traditional indoor instruction, as well as in the sit spot, inspired one of the primary research questions for this study: Might the sit spot activity, which centers students' silent, motionless, observations of their surroundings, be reinforcing some of the human separation that Plumwood describes? Does the sit spot simply extend the deification of silence as an ideal for learning environments to the outdoor space? How might our sonic inquiry project combine silent listening with movement and creative composition? How might activities focused on sound and listening disrupt the ideals and ideas of silence in all classroom settings? While these questions were motivating for me as a researcher, the final lesson was designed to be simple to appeal to the needs of the educators and students. Next, I focus on how ideas of decoloniality, nature-culture dualism, and creative thinking about environments informed the project design, intended student learning outcomes, and methodological approaches for this sonic inquiry project.

Context and Project Design

Students in this class engaged in place-based activities throughout the year up until the unit, and their teacher was open and excited about a related unit focused on sound and listening. Our plan for a short sonic inquiry project intended to give students

¹⁸ See Walter Gershon, *Sound Curriculum: Sonic Studies in Educational Theory, Method, & Practice* (Routledge, 2018).

another sensory tool with which to engage in their space. Additionally, from the start I had proposed that we embed the use of digital technologies in the unit, inspired by Springgay and Truman's work on walking methodologies.¹⁹ As I detail in chapter 2, interest in place-based education seems to be growing in response to the rise and ubiquity of digital technology in our world. Though the growth in place-based education is a welcome one, some scholars, particularly those focused on decolonial work in place-based education, warn that positioning place-based education as a respite or sanctuary from digital technology might simply be rehearsing age-old dualistic ideas (from Rousseau through Transcendentalist thinkers and into the present) that position children and childhood as innocent, simple, or "natural," on one side of the divide, while digital technology is considered to be a product of advanced, sophisticated scientific "culture" on the other side.²⁰ By integrating digital recording technology (iPads) into the unit, I was interested in challenging this idea of nature as a site for pure, unmediated learning, and also hoped to appeal to what seems to be a natural-cultural (and nearly universal) interest that children have in digital technologies. Building on the work of Springgay and Truman, whose work on arts-based walking methodologies are foundational to this dissertation, I began to think of these iPads as "activation devices" which Springgay and Truman argue can "rupture and queer the walk...slow us down and change our gait...problematize what it means to walk."²¹ Rather than think of the iPads as tools for recording nature, the project design encouraged students to see iPads as tools to (a)

¹⁹ See Stephanie Springgay and Sarah E. Truman, *Walking Methodologies in a More-than-Human World: WalkingLab* (Routledge, 2019).

²⁰ Affrica Taylor, *Reconfiguring the Natures of Childhood* (Routledge, 2013), 46-49.

²¹ Springgay and Truman, *Walking Methodologies*, 136.

encourage new ways of interacting with the place-based space they had become familiar with, and (b) support the composition (both literal and figurative) of new relationships and interests with the materials and micro-zones in the space. Technological recording also provided the opportunity for the creation of a much larger set of participant-created sonic artifacts which I could use to interpret and analyze the project, given that it was impossible for me to accompany all four groups at once in such a large space. In this way, the project took inspiration from Walter Gershon's work with qualitative sound methods, where student-created sound and music projects are central to learning outcomes, and the researcher combines recordings from these projects along with their own sonic recordings of the educational environment.²²

After an email exchange and several meetings with the classroom teacher, we decided on a lesson plan and some basic learning outcomes for the week. At the completion of the unit, we hoped that students would be able to classify different sounds and their sources; demonstrate basic listening and audio-recording skills; and explore forest-based spaces using sonic and sensory inquiry techniques. Following a hunch from the teacher, as well as findings from a study on a creative music composition exercise in Australia that showed that same-gender groups worked more collaboratively and creatively,²³ we decided to create same-gender groups of three to four students which would remain the same for the entire week-long unit. We designed a series of five two-hour long sessions intended to help students develop the basic listening and recording

²² See Gershon, *Sound Curriculum*.

²³ William J Baker and Georgina Harvey, "The Collaborative Learning Behaviours of Middle Primary School Students in a Classroom Music Creation Activity," *Australian Journal of Music Education*, no. 1 (2014): 12-13. <https://search.informit.org/doi/10.3316/informit.988228079790099>.

skills needed to complete a final sound art project by the end of the week. Each session was designed with a mixture of different types of activities. For example, on the first day, which was conducted indoors, we introduced the project and then the teacher facilitated a listening activity where one student hid an object in the room while the others sat with their eyes closed and then tried to guess where it was hidden based on what they heard. We then gave them a series of prompts (i.e. “What is your favorite sound and why?”) and they discussed and recorded their answers on their iPads to get accustomed to the sound recording application. On the second day, we moved outside and asked the students to do some silent recording at a sit spot. After a reflection discussion about what the students heard (and did not hear), we asked them to move as a group and record sounds of interest in the forest while also interacting with the space and making sound. Much running wild and smacking of rocks, trees, dirt, and leaves with handheld branches ensued. On the third day, we introduced the final project assignment, which was due at the end of the week. We started by talking about how scientists, poets, musicians, and storytellers each approach listening and sound differently. I read “Spring,” a poem by Mary Oliver, and we showed the students a Youtube video of a drummer using trees for percussion, as well as a short video about how Foley artists create soundtracks for movies. Inspired by these examples, the groups set off to begin working on the projects with either myself or a parent volunteer to advise and support them. Days four and five were devoted to project-making with support from myself, the teacher, and parent volunteers, and on Friday each group presented a sample of their work back to the class to conclude the unit.

Discussion

Dylan Robinson's work on Indigenous sound studies points out the ways that settler-colonial encounters with the outdoors have often been framed around leisure and recreation, whereby natural spaces and their sounds and sensory offerings are sites of extraction for peaceful, quiet experiences that rejuvenate and refresh the human body.²⁴ Our project design intended to disrupt this, and the chaos that ensued on the second day, once we let the student groups loose in the forest space with their sound recorders, was proof of concept. Each of the four groups was assigned an adult supervisor, either a parent volunteer, the teacher, or me, who accompanied them as they worked first on the various small assignments presented to them, and then on their final projects. By the end of the third day, I was starting to get nervous: were we expecting too much from the students, and in too little time? We had recommended that each group try to create just one two-minute piece inspired by some of the examples we provided them, and we asked each group to name themselves as a musical band or ensemble would. After surprisingly little discussion, they came up with their band names: Cocoa Beans (four girls), The Forest (three girls), Savage Apricot (three boys), and The Muddy Boys (four boys). The first three groups decided to create a story which they would soundtrack using whatever sounds they could make and record in the forest. The Muddy Boys announced they would be composing a forest percussion piece (though it soon became apparent that, as an ensemble, they were predisposed to free-wheeling and manic improvisation rather than planned out composition). By the end of the week, my anxieties proved unnecessary:

²⁴ Dylan Robinson, *Hungry Listening: Resonant Theory for Indigenous Sound Studies* (University of Minnesota, 2020), 68.

three of the four groups had produced exciting final projects (including the much worried-over Muddy Boys). And while the fourth group (Savage Apricot) had gotten a bit carried away with both their story and the fun they were having making and recording noises to soundtrack it, they had very clearly met the learning outcomes we had set for the unit. Below I briefly describe some themes and challenges that emerged throughout the week.

Visual Trash, Sonic Possibilities

On the second day of the project, we started with a silent listening and recording activity, and then we set the students loose in their forest classroom with their sound recorders to sonically explore the forest space under the supervision of their adult volunteers. This class's forest-based classroom was approximately three acres in size and triangular, and it was bordered by the school on one side, a town-owned building on another side, and a gravel road on the final side. The forest classroom is heavily treed with softwood hemlock and pines, a few scattered hardwood trees, some ferny sections, and some muddy wetland spaces (particularly so in the spring months when this took place). Over the years, small amounts of trash from the road and school have drifted or been thrown in: rubber tires, hub caps, candy wrappers, bottles and cans of all sorts (glass, plastic, metal), and scrap lumber. We were quite open in our prompt to the students, asking them to make sounds using their bodies and whatever they could find in the forest. Interestingly, three of the four groups immediately gravitated first to the trash to test its sonic possibilities. The Muddy Boys bounced up and down on an old tire like a trampoline; the Cocoa Beans found and claimed a Gatorade bottle, which they blew into like a flute and smashed with a stick; and Savage Apricot located a square piece of

plywood which they placed in a mud pit and then jumped onto from a nearby stump in squelchy glory. The teacher and volunteer parents reacted with concern, assuming that the students should be focusing on the natural materials in the space like rocks, sticks, plants, leaves, insects, birds, etc. Throughout the rest of the week, I observed both the teacher and volunteer parents trying to clear the space of small trash they found, in an effort, I assumed, to keep their group focused on the natural materials there (and maybe also just to keep busy in quiet moments).

Why were these students, when searching for sonic matter, drawn first to the human-made trash in their space, and why did the adults consider this interest a diversion from the established lesson plan? In the muted springtime forest-based space of browns and pale greens, the visual allure of these objects may have signaled bright sonic possibilities to the students. Heather Davis has written that “Plastic can be considered the substrata of advanced capitalism,” while also noting that it has “introduced entirely new sensorial regimes with its smooth surfaces and bright colours.”²⁵ The Gatorade bottle, vaguely flute-like, had been manufactured for handheld use of a different kind, and was therefore easy to turn into a musical instrument. The smoothness of the tire and the plywood were also inviting, and jumping on these objects seemed less of a risk, and more exciting, than jumping on a pile of sticks of unknown integrity. These are mere hypotheses which warrant follow-up, but the point I want to make briefly here is as much about the children as it is about the adults. Referring to Plumwood’s work, the challenge we humans face is an inability to fully grasp how our lives are complexly interwoven

²⁵ Heather Davis, “Life & Death in the Anthropocene: A Short History of Plastic,” in *Art in the Anthropocene: Encounters Among Aesthetics, Politics, Environments and Epistemologies*, ed. Heather Davis and Etienne Turpin (Open Humanities Press, 2015), 349.

with the flora, fauna, and matter of our environments, and this challenge is well-documented in both environmental and decolonial philosophy about nature/culture dualism. The parents and teachers in this study immediately sought to remove the trash in the space, or remove it from the activity, which is very much in line with how we in the US philosophically imagine place-based education: as a free, natural, space somewhat disconnected from the complex challenges of the world. And yet, what good does that do for our students to pretend that that their forest-classroom is free of trash, when it clearly was not? For the students, not yet well-versed in this dualistic practice, the sonic prompt gave them the frame to first notice how much human trash had drifted into the space. Second, it gave them the agency to see the creative possibilities inherent in trash, and seeing, hearing, and feeling out new possibilities is the real focus of this work.²⁶ At first, the adults sent a few curious looks my way, which I interpreted as questions or concerns about the use of trash as instruments. I made no indication of support or disinterest though and even helped one group explore the echo-like sounds of a metal culvert next to the road which seemed to ease some of the tension. Parent volunteers and teachers, however, continued to clean up trash throughout the week, which was both interesting for this study, and generally thoughtful.

Plumwood argues that there are “shadow places that provide our material and ecological support, most of which, in a global market, are likely to elude our knowledge

²⁶ The use of trash for artistic purposes also immediately reminded me of a new generation of Congolese artists who create costumes and sculptures from trash, a form of art that is also activist commentary about the state of politics, the environment, and natural resource extraction in the Congo. For examples, see Jonathan Shipley, “PHOTOS: Congolese artists channel ‘Mad Max’ and Chewbacca with costumes made of trash,” NPR, May 30 2022. <https://www.npr.org/sections/goatsandsoda/2022/05/30/1101281066/photos-congolese-artists-channel-mad-max-and-chewbacca-with-costumes-made-of-tra>

and responsibility.”²⁷ These “shadow places” help preserve our ignorance and disconnection from the local and global places that harbor the trash and toxicity of the developed world, and serve as the sites of extraction needed to support our modern lives and livelihoods. By allowing the trash instruments to remain part of this place-based sonic inquiry project, I wondered how this might inspire closer or different relationships with trash, the ways these students think about the environment, and the disposable nature of many of the products we cherish and buy. Can sonic, sensorial, and other artistic activities like these invite creative solutions to our culture of creating industrial matter with ephemeral use and eternal pollutive properties? Could they inspire a different way of thinking about consumption in a capitalist economy? Taking a decolonial approach may mean exposing students equally to both the wonderful complexity of the natural world and our human place in it, as well as the ways in which human cultures have spun out of balance with those ecological systems. By creating music from trash, these young students were noticing the effects of our modern, disposable lifestyles, and proposing new ways of raising awareness about the issue.

Embodied Experiential Metaphors

Though sound studies and methodologies often center sound, they are by no means limited to sound. As I will argue in the coming chapters, sound is a phenomenon that is not only experienced by the ears, and Gershon has noted the limitations of Western culture’s “five-senses model of the sensorium.”²⁸ From the start of group work, there was

²⁷ Val Plumwood, “Shadow Places and the Politics of Dwelling,” *Australian Humanities Review* 44 (2008), para. 1. <https://australianhumanitiesreview.org/2008/03/01/shadow-places-and-the-politics-of-dwelling/>.

²⁸ Gershon, *Sound Curriculum*, 11.

an immediate and clear divide between how each group approached their project. The Cocoa Beans, Savage Apricot, and The Forest chose a narrative approach, centering written language first in projects that featured intricate stories. None of the stories was written out entirely before recording, and each group composed the story from event to event, searching for materials and sounds in the forest that could add emphasis to their story. Yet each of the four groups had their own tactics. The Cocoa Beans roamed freely throughout the forest, drawing inspiration as they went, while The Forest and Savage Apricot stayed basically in one location. Meanwhile, the Muddy Boys seemed to crave the tactile, and sonic exploration appealed equally to their ears as to their sense of touch. In a swampy area where they were exploring the percussive sounds of water, they noticed floating globs of amphibian eggs and wanted to explore their sonic and haptic properties. Likewise, they each wanted to feel their hands vibrating when they thwacked trees and stones with sticks, and they took turns putting their heads inside a metal culvert while the other group members tapped it from the outside. For the Muddy Boys, sound was an open invitation for embodied artistic play and their need to feel and touch those sounds and their sources felt urgent and visceral.

Thorsnes and Frederiksen write that even simple artistic experiences with/in/through nature help create “embodied experiential metaphors” for participants.²⁹ These embodied experiential metaphors arise from three main premises: “1) that multisensorial embodied experience is central for learning/meaning making; 2) that

²⁹ Tollef Thorsnes and Biljana C. Frederiksen, “A Heartbeat of an Old Oak: The Emergence of Embodied Experiential Metaphors as Signs of Human Compassion with Trees,” in *Crafting Relationships with Nature Through Creative Practices*, ed. Biljana C. Frederiksen and Per Ingvar Haukeland (Scandinavian University Press, 2023), 53.

emotional engagement that accompanies such embodied experiences makes the experiences meaningful; and 3) that new insights that emerge in such embodied, emotionally loaded experiences can be expressed through metaphorical language.”³⁰ For the work that Thorsnes and Frederiksen have engaged in, as with this sonic inquiry work, the learning outcome here was to help participants realize the ways in which one is already a part of nature, and to build this understanding and relationship through tactile artistic work.³¹ To derive their findings, Thorsnes and Frederiksen utilized participant journaling and written reflection to search for metaphors. In this sonic inquiry project, the artifact was the students’ final projects, and in this way, these small pieces of sound art came to function as “metaphor” in much the same way. When I listen to these small sound art projects, what I hear is a specific expression of each group’s (and student’s) identity, as well as the development of this identity through relationship with the spaces and sounds they recorded and encountered throughout the week. The Cocoa Beans created a finely edited, concisely written, and carefully soundtracked story about a frog who is taken from his home by humans, and then generously returned to his habitat when the humans in the story begin to empathize with the amphibian who has been kidnapped. The story showed their advanced writing skills, attention to detail, ability to work collaboratively, and in the end, attunement to ecological awareness and empathy with the non-human (in an early version of the story, the frog lived out his days in confinement in the classroom before meeting an untimely death). The Forest, which dwindled to just two students due to an illness, created an extended work centered on the story of a horse. Led

³⁰ Frederiksen and Haukeland, *Embodied Experiential Metaphors*, 53.

³¹ Frederiksen and Haukeland, *Embodied Experiential Metaphors*, 56.

by one student who was a horse lover, it was a display of an already deep relationship and interest in all things equine, a way to story and display this outside-of-school knowledge and share it with the class. And the Muddy Boys produced a series of abstract percussive pieces that showed off their physicality, goofy humor, and unpredictability. Though the project was brief, and more work could have been done to discuss the experience with students afterwards to confirm these findings and explore others, for these three groups who completed the project, working through sound seemed to give them new opportunities to explore and build personal and collaborative connections with their place-based space, as well as continue to define and build their personal social identities. In short, these pieces of sound art became “embodied experiential metaphors” of the type of person they wanted to be in and out of school.

Conclusion and Chapter Map

Though this sonic inquiry project was brief, I heard from many of the students and their families afterwards that this was a defining event of the spring, something that was technological, fun, creative, and educational, and opened their ears to new ways of listening. The main research project of this dissertation, a songwriting unit that brings together pre-kindergarten students and community musicians, builds on some of this work, albeit with a different project design catered to the specific needs of the age group and classroom. Despite these differences, the theories, themes, and methodologies that I explored in this chapter will continue as threads throughout this work.

In chapter 1, I focus on the field of sound studies, and work to set the stage for the sonic socio-cultural norms of schooling in the US. In doing so, I question fundamental understandings of sound, noise, and silence, arguing for a more careful attention to how

we think about these phenomena in educational settings, and possible applications in place-based educational settings. Chapter 1 concludes with a literature review of recent research in the field of educational sound studies. In chapter 2, I focus on decoloniality as a theoretical framework for this dissertation. Ideas of decoloniality and decolonization are varied, and increasingly trendy in educational, artistic, and activist spheres, and in exploring this framework I discuss some of these trends as a way of leading to the specific form of decoloniality mobilized here, which centers around the nature/culture binary I introduced above. Chapter 3 is focused on qualitative sound methods, from sonic ethnography, sonic geography, and research-creation walking methodologies. The chapter also details my research questions, the context and design of the research, and ethical implications for the main fieldwork period (which occurred from March – June 2025) of this dissertation.

Chapters 4, 5, and 6 are chronological, each focusing on a different aspect of the fieldwork. Chapter 4 is a sonic geographic account of this place-based pre-kindergarten classroom. In this chapter I utilize the tools of sonic ethnography and sonic geography to describe the “sonic dialect”³² of one classroom. My discussion shows how this ecology of sounds is produced through the entanglement of multiple institutional, sensorial, and more-than-human actants. Chapter 5 is a sibling to chapter 2 and focuses on two stories from the forest classroom to highlight decolonial pedagogical possibilities. I detail the story of the attempted extraction of a large rock and the year-long collaboration with Rebecca Mouse, a series of mice (all named Rebecca Mouse) that students interacted

³² David Matless, “Sonic Geography in a Nature Region,” *Social & Cultural Geography* 6, no. 5 (2005): 750. <https://doi.org/10.1080/14649360500258245>.

with throughout the entire year. Inspired by the teachers in this course, I theorize a path towards decolonial praxis for early childhood students inspired by Tsing's arts of noticing, which I think of as the arts of wondering. Chapter 6 describes a collaborative songwriting project between students in this pre-kindergarten class, their teachers, and musicians from the community (including myself). This chapter is more research-creation than social scientific account, and taking cues from Haraway's "speculative fabulation,"³³ I explore the idea of songs as *sonic fables* and theorize about the uniqueness of sound art and music for unlocking creative ideas to create place, entanglement, hope, and relationality. In a short final chapter, I conclude by thinking about future directions and possibilities for collaborative, multispecies, and sonic creative works and research.

³³ Donna Haraway, *Staying with the Trouble: Making Kin in the Chthulucene* (Duke University Press, 2016), 213.

CHAPTER 1 ∞ WHITE SOUND, UNHEARD SILENCE, AND THE POLITICS OF NOISE IN EDUCATION

In this dissertation I use qualitative sound methods to research sound in environmental educational settings. In this way, sound is both the vehicle and the destination, as I utilize sound methods to think about the sonic world of education. In so far as it is possible, in this chapter I will turn my focus to the epistemological and philosophical side of sound, leaving discussions of sound methods and methodologies to a later chapter. My focus in this chapter is to begin to explore and question white, Western cultural ways of listening and understanding sound as I build a conceptual framework centered on ideas of decoloniality pertaining to sound, human-environment interactions, learning, and experience. This chapter is divided into two sections. The first section begins with a brief history of the vast and ever-expanding field of sound studies, while also connecting the threads of this project back to the disciplines of education, geography, music, and composition. In the latter half of this section, I explore various approaches to thinking about sound as experience, as education, and as culture. Section two concludes this chapter with a literature review covering recent scholarship from the field of sound studies that has inspired my research projects here.

One of the opportunities presented in this dissertation is the task of bringing the fields of sound studies and place-based educational studies into conversation with each other in a way that feels organic and meaningful. Gershon notes that while discussions of sound and voice have cropped up in educational research for many years, it is only recently that scholars have come to consider these disparate threads as part of a larger

field of “educational sound studies.”³⁴ In line with Gershon, I argue that educational sound studies bring increasingly important insights and critiques to bear on studies of educational pedagogy, particularly in a time with rampant advances in digital technologies. Gershon writes that “critical tools of educational sound studies can function at once as sound interruptions to ocular oppressions and postdigital tools positioned against the continuing onslaught of new medias as carriers of educational eugenics.”³⁵ As I show throughout this work, sound studies as a field has historically been deeply intertwined with environmental sound, and this dissertation contributes to the field of educational sound studies by amplifying the history of environmental sound art in sound studies within the growing field of educational sound studies. Given the current urgent climate crisis, I consider the intersections between sound, education, and the environment, showing how discussions of the environment in educational sound studies relate to an already rich body of knowledge about the ways in which race, class, and gender are sounded. Conversely, in the next chapter I will show how studies of sound and listening are intrinsic to place-based education, which often focuses on embodied, artistic, and experiential learning in the outdoors. I begin weaving these threads together starting with an exploration of how environmental ideas are central to the field of sound studies.

Sound Studies, the Environment, and Creative Composition

Jonathan Sterne writes that “*Sound studies* is a name for the interdisciplinary ferment in the social sciences that takes sound as its analytical point of departure or

³⁴ Walter Gershon, “Educational Sound Studies: Scales and Modes, Neoliberalism as Eugenics, and Possibilities for the Sonic as Postdigital Tools for Critique,” (2022): 299. <https://doi.org/10.1007/s42438-022-00351-y>.

³⁵ Gershon, “Educational Sound Studies,” 299.

arrival.”³⁶ Artists, writers, scientists, and of course, musicians, have been thinking and writing about sound (and music) for ages, but there seems to be some common agreement among scholars that Alexander Graham Bell’s technological experiments with sound, which focused on hearing and speaking interventions for his wife who was Deaf, were a pivotal moment in the field. As Sterne’s definition above shows, sound studies are broad in scope, and Sterne argues that it is imaginative questions about sound, rather than a specific set of practices of inquiry, that unite sound researchers. He writes, “Today, many people have become sound students to cultivate and facilitate their *sonic imaginations*, as well as those of people in other fields as sound becomes important to their work. *Sonic imagination* is a deliberate synesthetic neologism—it is about sound but occupies an ambiguous position between sound culture and a space of contemplation outside it. Sonic imaginations are necessarily plural, recursive, reflexive, drive to represent, refigure and redescribe.”³⁷ In this way, sound researchers do not merely study sound but question the entire endeavor, and the social constructions that it is built upon. One of the main questions about sound that this dissertation brings up is a pivot between our human understandings of sound, and the ways in which sound matters and vibrates for the more-than-human. We know, of course, that animals hear (many with greater abilities than humans). Studies of the ways in which plants and fungi listen to one another and communicate in almost musical ways seem to be in the news weekly. These are both ubiquitous facts, and yet how sound feels and what it means in each unique body (human and more-than-human) is a question that will linger at the periphery of this work.

³⁶ Jonathan Sterne, “Sonic Imaginations,” in *The Sound Studies Reader*, ed. Jonathan Sterne (Routledge, 2012), 2.

³⁷ Sterne, “Sonic Imaginations,” 5.

Sound studies as a distinct field gained some steam in the 1960's, as the fields of music, ethnomusicology, critical geography, anthropology, sound design, sound art, acoustics, biology, sensory studies, ecology, philosophy, Deaf studies, and more recently, the field of ecomusicology, increasingly turned towards similar concerns about sound. The field of educational sound studies has grown increasingly diverse in recent years, with race and gender becoming primary lenses for consideration. Much of the literature, as well as the practitioners and voices I review and reference here (particularly in the field of educational sound studies), are focused on the Global North's settler cultures to understand the ways in which sound is illustrative of power structures in the societies and communities most similar to the region where this study takes place. There are many other scholars who focus on sound through lenses of decolonization, critical theory, and critical race theory (and through collaborations with Deaf studies scholars), including many who focus on Black, Indigenous, and Global South sound studies,³⁸ and sonic studies in education are increasingly turning to these frames.³⁹

R. Murray Schafer is heralded as a contemporary figurehead in sound studies, or what he thought of as "soundscape" studies, and his body of work considers sound, music, nature, and education in ways that are critical to framing how this dissertation emerges from the field of sound studies and contributes to it. Schafer argued that ocular ways of looking at, understanding, and organizing the world have taken prominence over

³⁸ See Gavin Steingo and Jim Sykes, "Introduction: Remapping Sound Studies in the Global South," in *Remapping Sound Studies*, ed. Gavin Steingo and Jim Sykes (Duke University Press, 2019), 1-38.

³⁹ There are many intellectual and artistic cultures around the world where music and non-musical sound are being studied and created in unique ways, though many of these artists and researchers do not necessarily consider that their work falls under the header of "sound studies" in quite the same way.

other ways of being and sensing.⁴⁰ He argued that soundscapes need attention, study, and conservation, and his work centered around defining sound within binary terms of hi-fi and lo-fi soundscapes—essentially as sound and noise. In Schafer’s telling, hi-fi sounds (or soundscapes) include the sounds of nature and music where humans can discern the fine details of acoustic resonances, while lo-fi soundscapes are the noises of industry and modernity, such as machines, factories, and other poorly designed urban soundscapes. Schafer’s mission was two-fold: to invite deeper listening, but also to make us aware of the modern (industrial) conditions which prevent deeper listening of so-called hi-fi soundscapes. For Schafer, soundscape preservation was therefore deeply linked to the environmental movement which was simultaneously emerging when the work was published. In Schafer’s listening paradigm, sounds can be ranked, defined, and graded, and though his work is groundbreaking, well-intentioned, and certainly very hip for its time, Schafer’s writing has also been criticized as representing a white, settler-colonial, human mastery approach to listening and the environment.⁴¹

Schafer’s work is more of a conservational clarion call than a philosophical analysis, but as a foundational document in the field of sound studies, his work contains seeds for this dissertation’s mix of sonic research and soundscape composition. It also shows how ideas of nature and sense of place are deeply written into the field of sound studies, and that sound/noise and nature/culture binaries are foundational to the discipline. Schafer’s work also defined how sound studies is not simply about listening to natural sounds and sonic symbols, but equally about creativity, composition, and

⁴⁰ Schafer, *The Soundscape*, 3-12.

⁴¹ Robinson, *Hungry Listening*, 1.

designed sound. In this way, his work shows the power of coupling deep listening to the world around us with creative compositional practices. Today many of the researchers working in the field of sound studies are also musicians and artists, and their creative and scholarly work continues to redefine both compositional and research practices within the field of sound studies and sound art. While Schafer's work is critical to the field of sound studies and this dissertation, I also want to be cautious with this work for the ways in which it represents a white, male, abled-bodied approach to sound studies. First Nations sound theorist Dylan Robinson has pointed to Schafer's negative, perhaps even racist, writing about Indigenous song and sound cultures.⁴² Schafer's work is both a call to mix listening and creative composition in nature-based classrooms, and a reminder that the field has resonances of outdated ideas about listening and composing in natural environments.

Sonic Whiteness and Settler-Colonial Listening

Brandon Labelle argues that contemporary Western cultural constructions of sonic norms are deeply linked to the idea of the home as a private, quiet, sanctuary set apart from the increasing noise (both sonic and cultural) of the modern industrialized world.⁴³ Labelle writes that as cities in the Global North developed in the 19th century, and the nature of work became increasingly mechanized, the home increasingly was understood (or hoped for) as "a place for re-establishing a psychic center."⁴⁴ Bijsterveld has noted

⁴² Robinson, *Hungry Listening*, 1-3.

⁴³ Brandon Labelle, *Acoustic Territories: Sound Culture in Everyday Life* (The Continuum International Publishing Group, 2010), 48-54.

⁴⁴ Labelle, *Acoustic Territories*, 50.

that “Complaints about noise seem to be a part of all recorded history”⁴⁵ and that in the 1800s, the increasing noise in both urban and rural life was considered a “brute assault” on the “mental refinement” of the intellectual class.⁴⁶ Bijsterveld’s work shows the ways which in laws and public educational campaigns have constantly shifted to reflect changing discourses around sound and noise, particularly in Europe and North America, in the past two centuries.⁴⁷ These histories are deeply entangled with how we experience modern life, at work, at school, while recreating, and at home. In the second half of the 20th century in the US, private home ownership, a quiet place of one’s own to do as one pleases, has long been lauded as a rite of passage into adulthood and the ultimate symbol of the successful modern family life. LaBelle writes that, “The production of the home is intimately linked to the bourgeois conception of privacy, interweaving middle-class affluence with a steady withdrawal from the full complexity and intermixing of everyday experiences.”⁴⁸ It is this bourgeois conception that “carries within it a sense for auditory clarity, where order is equated with quiet, and the maintenance of domestic life with audible regulation.”⁴⁹ Labelle then goes on to trace these domestic sonic dreams into the 20th and 21st century, where the increase in mechanized noise has rubbed up against the desire for privatized calm and quiet, causing an outcry for stricter noise abatement laws, white flight into suburban spaces, and the inevitable pushing back against these cultural

⁴⁵ Karen Bijsterveld, “The Diabolical Symphony of the Mechanical Age: Technology and Symbolism of Sound in European and North American Noise Abatement Campaigns, 1900-40,” in *The Auditory Culture Reader*, ed. Michael Bull and Les Back (Berg, 2003), 166.

⁴⁶ Bijsterveld, “The Diabolical Symphony,” 166.

⁴⁷ Bijsterveld, “The Diabolical Symphony,” 166-183.

⁴⁸ Labelle, *Acoustic Territories*, 51.

⁴⁹ Labelle, *Acoustic Territories*, 52.

flows by those who don't share these normative conceptions of home and sound.⁵⁰⁵¹ These cultural trends are deeply tied to Cheryl Harris's work on whiteness as property, and inextricable from redlining and other discriminatory housing development and property rights' practices.⁵² Harris has argued that "Property is thus said to be a right, not a thing, characterized as metaphysical, not physical."⁵³ In line with Harris's work, I argue that there is a set of sensory expectations tied to the idea of whiteness as property, and this sonic white sensorium is often construed as a set of inalienable rights and universal facts, rather than mere cultural preferences. By this I mean that white property (human and place) is always already understood as carrying with it a set of sonic and sensory expectations, and white culture (broadly defined) expects that these certain soundscape norms will be observed and respected in appropriate ways. And yet sound is an ambivalent, ephemeral, and fluid phenomena that does not abide by the inalienable rights of whiteness as property. In this way, sound is a phenomenon which can help us probe at these ideas of whiteness as property, or sonic whiteness.

The sonic whiteness LaBelle describes is also written into the fabric of the US public educational project, which is founded on the idea of the possibility of creating a national culture with which to stitch together a nation-state. In teaching young people how to be productive members of society, its economy, civic life, and political processes, we also teach them to be respectful members of their communities, and their families,

⁵⁰ Labelle, *Acoustic Territories*, 52-54.

⁵¹ In the 21st century, the impact of the subprime mortgage crisis, lack of housing stock in many US states, rising inflation, skyrocketing real-estate prices, and cultural challenges to hetero-normative temporality seem to be causing a shift in the idea of home ownership as a marker of success. More studies are needed on the effects of these developments on understandings of sound, home, and community in the US.

⁵² See Cheryl Harris, "Whiteness as Property," *Harvard Law Review* 106, no. 8 (1993).
<https://doi.org/10.2307/1341787>.

⁵³ Harris, "Whiteness as Property," 1725.

which means increasingly the sharing of these bourgeois notions of developing and respecting the norms of appropriate behavior, affect, and sound/voice production. It follows too, that if we idealize the quiet home as a place to find a “psychic center,” then our ideal educational environments must also serve to both replicate the psychic center for a certain type of student and seek to reproduce those norms for others outside the white middle-class to be socialized into these ideals. To return to Harris’s framing of the issue, the belief that students will be most successful if they attend to reading, writing, math drills, and science projects in quiet—and that the athletic field, gymnasium, or music room is the most appropriate place to be noisy or attend to the production of sound—is not a universal truth or inalienable right, but rather a cultural and sensory norm that is not shared by all in this extremely diverse country. Studies of intercultural communication show how our cultural backgrounds highly influence our ideas about who can speak, when, and how,⁵⁴ and students bring these expectations into their classrooms each day, sometimes with frictional results. Much of the educational sound studies literature reviewed in the next section of this chapter will amplify this point.

Indigenous Sound Studies and Relational Listening

Dylan Robinson’s work on Indigenous sound studies suggests that the West’s deeply entrenched economic, political, cultural, and spiritual extractivism influences our sense of sonic norms. In his work *Hungry Listening*, Robinson shows how Western listening and musical practices, much like the Western approach to environmental resources, are extractivist in their own right.⁵⁵ Within the musical realm, this means

⁵⁴ S. Aqeel Tirmizi, “The Impact of Culture in Multicultural Teams,” in *Effective Multicultural Teams: Theory and Practice*, ed. S. Aqeel Tirmizi and Claire B. Halverson (Springer, 2008), 21-42.

⁵⁵ Robinson, *Hungry Listening*, 2-3.

listening in order to extract feelings, emotion, knowable conclusions and storylines from music rather than framing sound as a subject unto itself with an “irreducible alterity”.⁵⁶ These practices extend to listening to nature and how our socio-cultural conditions inform our sensory perception of surroundings. Robinson argues that some settler cultures relate to natural environments as places to extract experiences (sensory, academic, professional, emotional) rather than hear and experience these landscapes as relational sites for subsistence and the production of sovereign but entangled life possibilities, which is how Robinson describes Indigenous modes of listening and relating.⁵⁷ In this way, as I tried to show in the introduction, the design of place-based educational activities and the ways in which students are taught to interact with their spaces is quite critical. Do we want students to sit and listen in awe to ecologies as if they were static, non-agentic spaces for our enjoyment and edification, or do we want them to engage in messy play that animates human-environmental connections through embodied learning? Or something else entirely? There are pedagogical reasons for all approaches, and a meaningful way of bringing principles of listening into education is to frame and question our listening practices, and which students they seem to be serving.

One of my primary impulses for taking on this specific dissertation is the global climate crisis. For decades, climate scientists have been documenting the ways in which the Global North’s model of resource extraction and the lifestyles and livelihoods that sustain and are sustained by these resources are the primary cause of global climate change. Robinson’s work therefore begs the question: can non-extractive listening, to

⁵⁶ Robinson, *Hungry Listening*, 64.

⁵⁷ Robinson, *Hungry Listening*, 68.

nature and to our fellow humans, play some small part in teaching us to turn towards other non-extractive ways of being in the world? Inspired by the growing field of environmental humanities, the sonic research projects here explore listening, composing, and conceptualizing sound in ways that might be productive towards a variety of educational, artistic, climate justice, and multi-species justice projects, and responsible to the human and more-than-human beings affected by human-caused climate destruction. The rise in place-based education in the US is attributable to the growing consciousness and concern for climate change, and yet my concern is that the current way of doing place-based education may be insufficient to the task. Robinson's work provides a critical piece to this equation by showing how Indigenous notions of listening and sensing are deeply intertwined with the ways we think about and design approaches to development, sustainable economies, community building, and governance structures. To be clear, I am not simply proposing that settler communities simply adopt Indigenous listening practices as a solution to this problem. This would be colonial in its own way, and I am sure that such a project would completely miss the mark. Rather, I am interested in building a framework for revitalizing Western traditions and creating new rituals and traditions to explore the ways in which an education of the senses may be linked to how we connect to places and conceptualize responsible ways of interacting with each other and our environments. As a white person, I am cautious about exploring Indigenous theory in this way, but as Ahenakew writes so eloquently, the goal here is to "move from sense-making to sense-sensing, displacing the centrality of Western reasoning."⁵⁸ Human lives are

⁵⁸ Cash Ahenakew, "Grafting Indigenous Ways of Knowing Onto Non-Indigenous Ways of Being: The (Underestimated) Challenges of a Decolonial Imagination," *International Review of Qualitative Research* 9, no. 3 (2016): 336-337. <https://doi.org/10.1525/irqr.2016.9.3.323>.

increasingly linked across space and time by global flows of culture and capital, and tackling intractable problems is only possible if we consider the widest variety of tools and approaches available. By de-centering Western reasoning instead of eliminating it completely, I believe the Global North has a better chance of charting an ethically and environmentally responsible way forward to reinvigorate facets of our own culture that reinforce relational ways of being and knowing with the environment.

Thoreau and Du Bois: Complicating Sound and Coloniality

In a recent article about decolonial approaches to education, Nxumalo and Cedillo criticize “child-centered approaches that recapitulate modernist colonial discourses of a mute, pure, and separate nature.”⁵⁹ This colonial discourse is founded on the idea that human culture is above and outside nature, which is only a silent, peaceful, and (as the introductory chapter showed) trash-free backdrop for human action, innovation, development, and at the extreme, resource extraction. While Labelle and Robinson each make salient points about what I call sonic whiteness, I would argue that these distinctions between colonial and decolonial ways of listening and being are less static and significantly more complicated than many scholars admit to today.⁶⁰ In Thoreau’s seminal work *Walden*, written in 1854, there is already a tension or unease with the idea of a static and masterful Western human approach to nature, complicating the idea that Western and Indigenous thinking is always completely dichotomous. Thoreau’s writing contains healthy servings of romanticized nature in *Walden*, but often he recognizes,

⁵⁹ Fikile Nxumalo and Stacia Cedillo, “Decolonizing Place in Early Childhood Studies: Thinking with Indigenous Onto-Epistemologies and Black Feminist Geographies,” *Global Studies of Childhood* 7, no. 2 (2017): 100. <https://doi.org/10.1177/2043610617703831>.

⁶⁰ I take up this complication again in the next section on coloniality, particularly through Olufemi Taiwo’s work *Against Decolonisation*.

searches, and yearns for a spirit that transcends this separation, which seems to arise from his frustration with the growing capitalist engine of US society in the 1900's. The opening lines of a chapter titled "Solitude" encapsulate this contradiction: "This is a delicious evening, when the whole body is one sense, and imbibes delight through every pore. I go and come with a strange liberty in Nature, a part of herself."⁶¹ Is this an expression of a relationality with nature in a decolonial sense? Or is Thoreau's impulse to consider himself part of nature a way of play-acting an Indigenous spirit, what Tuck & Yang call a "settler move to innocence," or as Ahmed (quoted in Tuck & Yang) put it, to "become without becoming"?⁶² Can it be both? Is the academic impulse to draw a clear line between colonial and decolonial, Western and Indigenous ideas about nature itself a colonial act?

While *Walden* is certainly a foundational work on ideas about nature, particularly in New England where this dissertation takes place, it also contains some of the earliest Western philosophical writing about the ways in which sound, place, learning, and literacy are bound up together, which Thoreau explores in a chapter devoted entirely to the sounds of his adopted home. Thoreau begins this chapter with a relational meditation, writing that "while we are confined to books...we are in danger of forgetting the language which all things and events speak without metaphor, which alone is copious and standard."⁶³ Like many sound-obsessed naturalists, Thoreau spends much of the chapter reveling in the beauty of birdsong, but also dives into a lengthy discussion of the

⁶¹ Henry David Thoreau, *Walden and Civil Disobedience*. (Penguin, 2017), 104.

⁶² Eve Tuck & K. Wayne Yang, "Decolonization is Not a Metaphor," *Decolonization: Indigeneity, Education & Society* 1, no. 1 (2012): 13.

⁶³ Thoreau, *Walden*, 90.

industrial sounds of the railroad. In the 18th century, the railroad was quickly becoming a great connector of people and places, and Thoreau, much like later proponents of experimental music and soundwalks, takes great interest, pleasure, and meaning from the sounds of railroads and transportation. To him, they indicate a globalizing connection to the world outside his rural locale, and he sits in wonder at the ways in which the locomotive system has begun to set and meter a new sort of temporality, built around the machinations of industry rather than the cosmos.⁶⁴ Thoreau also sees communal vibratory qualities of sound in ways that connect humans and non-humans, a non-linguistic, non-discursive relationality. Reflecting on the distant sound of trains one evening, he writes that “All sound heard at the greatest possible distance produces one and the same effect, a vibration of the universal lyre.”⁶⁵ He later notes that the lowing of cows and the far-off sounds of young children singing to him represent “one articulation of Nature.”⁶⁶ For Thoreau, sound in a phenomenological sense is not something that builds a broken bridge between culture and nature, but rather something that has always connected humans to their environments, and the sounds of man, industry, birds, leaves, and cows all carry representations and significations that impact and are interpreted by beings of all sorts. Thoreau proposes that while literature is the domain of man, sounds are the domain of all living and non-living matter, a sort of neutral phenomenon or level playing field of embodied experience. *Walden's* focus on sound and nature is an example that as long as there has been a culture of sonic whiteness, or settler listening culture, there has been equally a Western tradition that pushes back against normative ways of listening to

⁶⁴ Thoreau, *Walden*, 94-100.

⁶⁵ Thoreau, *Walden*, 99.

⁶⁶ Thoreau, *Walden*, 100.

sound, music, and nature. As I will show later in this chapter, *Walden*, perhaps more than any other piece of literature, is a seminal text that both sets up the trajectory of a US American anti-industrial return to nature and complicates the idea that Western approaches to the environment are always already destructive, extractive, and misguided. And for Thoreau, sound and listening are a critical hinge in understanding how humans and environments co-create each other, despite the rise of industrialism and extractive economies.

Thoreau's sound philosophizing is also acoustically related to W.E.B. Du Bois's story of his family's genealogy. The transatlantic slave trade was devastating to the cultures of the enslaved peoples who were forced to make lives in the new world, and Du Bois recounts how his strongest connection to Africa was a song brought over by his great-grandmother Violet and passed down through many generations in the US.⁶⁷ By the time Du Bois learned the song, the meaning of its words were lost to the family, but they continued to cherish the song and pass it down as a family tradition. If for Thoreau sounds were a way to connect humans to the world around them—the industrial, biological, and geological happenings of the present—for Du Bois sound is a way of connecting traditions from the past through the present and into the future. Though Du Bois was highly educated in the Western sense, many of his ancestors could not read or write, and this song and melody was a thread through history, connecting ancestors through traditions that even the violence of the slave trade could not stop. Du Bois's song carries with it the relationships of his ancestral African family to their native home and culture, as well as all the little adjustments in melody and phrasing that songs passed

⁶⁷ W. E. B. Du Bois, *Writings*. (Library of America, 1987), 636-638.

down through traditions acquire. In this way, it is not simply an artifact of a culture, but a living and breathing vibration across several generations that represents both family history and their resilience in their new home. For Du Bois, sound connects vertically through time, while for Thoreau it is a horizontal resonator across space and place. And in each case sound expands the palette for understanding how sound is a relational phenomenon.

Sonic Affect and Experience

To conclude this section on sound, I want to dwell for a moment on the idea of sound as affect. LaBelle, mobilizing the work of Didier Anzieu, argues that sound is an early and immediate sensory channel for humans, starting even before birth (what Anzieu calls the fetus's "sonorous envelope").⁶⁸ LaBelle writes that "It is from the sonorous wrappings, which purr around us, that we draw out our first experiences of being a body in the world, and importantly, how the stirrings of sound work as a relational medium or channel, linking the deep rustlings of the interior to the motions and movements of the external world." Gallagher similarly argues that "understanding sound as affect strips back the discursive and socio-cultural layers of sound to begin analysis at a more basic level, with the vibrational movement of bodies. This movement is a 'base layer' of sound, which tends to accrue or entrain other layers—motor responses, feelings, perceptions, meanings, memories and so on—but which does not require these layers, and is thus not reducible to them."⁶⁹ As humans, we carry with us these embodied experiences of sound,

⁶⁸ Brandon LaBelle, *Sonic Agency: Sound and Emergent Forms of Resistance* (Goldsmiths Press, 2018), 128.

⁶⁹ Michael Gallagher, "Sound as Affect: Difference, Power and Spatiality," *Emotion, Space and Society* 20 (2016), 43. <https://doi.org/10.1016/j.emospa.2016.02.004>.

both at a deep affectual level, as well as in cognitive and cultural ways that may be more discursively noticeable. The result is that during our movements in and through the world and institutions, our bodies and ears take in sounds and soundscapes, and our affectual/cultural actions and reactions are foundational to our understandings of our surroundings. Sara Ahmed, thinking with Fanon's work, writes that "Colonialism makes the world 'white', which is of course a world 'ready' for certain kinds of bodies, as a world that puts certain objects within their reach. Bodies remember such histories, even when we forget them."⁷⁰ Sonic environments have the power to provide great comfort and discomfort, and it is my contention (and others in the field of educational sound studies) that the possibilities or obstacles for learning rest in large part on how students feel, in their bodies and through their sensory experiences, about the classroom environment. It is hard enough to recognize or measure how our bodies feel and learn, and it is another even more challenging step to design a curriculum that teaches young people how to recognize and feel that embodied wonder, and to build on those experiences in measured and critical ways. Educational soundscapes are intrinsically important to the idea of creating an inclusive affectual environment for student learning, whether indoors or outdoors, and the research here arises from the assertion that sound and soundscapes can be designed, composed, and tinkered with in the pursuit of a better learning environment if we pay careful attention.

Literature Review: Sound Studies in Education

⁷⁰ Sara Ahmed, "A Phenomenology of Whiteness," *Feminist Theory* 8, no. 2 (2007): 153-154. <https://doi.org/10.1177/1464700107078139>.

Educational sound studies challenge how we think about sound, noise, and silence; explore the links between sound, language, and listening; and de-center the idea of language and narrative as the primary sonic vehicles of educational and experiential information. Sound, as I define it, is a phenomenon, an ephemeral flow of vibrations and resonances. Sound is the vehicle for verbal language, but possibilities for sound and vibration also greatly exceed human language. Material feminist thought encourages us to think of sound as a form of agentic matter, able to pass through imagined borders and form assemblages that link human and non-human bodies and matter in spaces with “distributive agency.”⁷¹ Karen Barad writes that “The belief that grammatical categories reflect the underlying structure of the world is a continuing seductive habit of mind worth questioning,”⁷² and educational sound studies dwell on the idea that sound is not simply a vehicle for language, but a vibrating landscape of non-linguistic information that challenges “the discursive nature of reality.”⁷³ To study sound is therefore to probe at and blur the intersections between language, voice, silence, learning, experience, and the sensorium in an effort to understand the interplay between the material and the discursive.

Noise, on the other hand, is a subset of sounds (and symbols) which are socio-culturally undesirable, and human classification of some sound as noise can be deeply linked to privilege, power, race, class, gender, and sense of place and belonging. This distinction between noise and sound is a critical one in education because it leads to

⁷¹ Jane Bennett, *Vibrant Matter: A Political Ecology of Things* (Duke University Press, 2010), 21.

⁷² Karen Barad, “Posthumanist Performativity: Toward an Understanding of How Matter Comes to Matter,” *Journal of Women in Culture and Society* 28, no. 3 (2003): 802. <https://doi.org/10.1086/345321>.

⁷³ Maggie MacLure, *Discourse in Educational and Social Research* (Open University Press, 2003), 5.

considerations of the ways in which teachers design sonic and sensory classroom expectations, as well as use sound, noise, and silence to uphold cultural values about learning. Gershon writes, plainly, that “Sounds that are part of the teacher’s agenda are educational, those that are not, aren’t.”⁷⁴ In this way, what we call noise is socially contingent on our expectations of what an educative and productive classroom should sound like. This distinction is something that is taught at the earliest levels of education, as educators curate classroom environments with basic rules about who can talk, move, or make sound when, where, and why. It also becomes a central point of inquiry as I seek to understand the type of teaching and learning that can happen in place-based classrooms when we bring ideas of deep listening and sound design in as major components of learning with and about nature.

Silence in educational settings (indeed in most settings) has typically been defined as the absence of human language or human sound.⁷⁵ Yet true silence is essentially non-existent in our worlds and educational settings (a point that is obvious in most outdoor settings), and yet the idea of silence is pervasive in pedagogical theory and practice. Li argues that silence allows students and teachers time to formulate thoughts and dwell on ideas, and yet is much undervalued in conversational educational settings, a holdover from the banking model of education which considers silence to be unproductive.⁷⁶

⁷⁴ Walter S. Gershon, “Embodied Knowledge: Sounds as Educational Systems,” *Journal of Curriculum Theorizing* 27, no. 2 (2011): 77. <https://doi.org/10.63997/jct.v27i2.348>.

⁷⁵ One of the earliest and most famous challenges to this idea is John Cage’s composition 4’33”, which asks the performer to sit at a musical instrument for four minutes and thirty-three seconds without playing it. The sounds of the audience, the street, and the performance hall take the place of music, challenging our definitions of music and silence. Cage’s work is foundational to much of the field of sound studies for its philosophical and participatory approach to the world of music and sound.

⁷⁶ Huey-li Li, “Silences and Silencing Silences,” *Philosophy of Education* (2001). <https://doi.org/10.63997/jct.v27i2.348>.

Schultz has studied “silence as a form of power, and silence as a form of protection,” noting the ways in which teachers orchestrate speech and silence in classrooms, as well as how students often remain silent so as not to expose personal and academic vulnerabilities in class.⁷⁷ Schultz reminds us that there are as many types of silence as there are sounds and noises, that silence is dynamic and nuanced, and that listening for silence and its meanings is a critical part of sound studies research. Indeed, one of the central aims of work on educational sound studies is to interrogate the nuances of silence (or lack of speech) in ways that may be productive for improving teaching and learning in a wide variety of settings.

In thinking about sound, noise, silence, and power, it is important to reiterate that the field of Deaf studies is a sister to the field of sound studies, with the contemporary history of both fields deeply tied to Alexander Graham Bell’s work.⁷⁸ Both fields take as their central premise the idea that sound is a dominant phenomenon in human socio-cultural interactions and sensemaking, and that humans have been far too limited in their exploration of how sound affects our bodies and our world. Thinking about sound through a Deaf studies frame provides a constant reminder that sensing is always mediated by politics and power, and that human understanding of sound is always in some way personal, cultural, and subjective. Sound studies and Deaf studies are united in the idea that experiencing sound is more than just an exercise in ear-based listening, as

⁷⁷ Kathryn Schulz, “After the Blackbird Whistles: Listening to Silence in Classrooms,” *Teachers College Record* 112, no. 11 (2010), 2835. <https://doi.org/10.1177/016146811011201101>.

⁷⁸ For more on the connections between sound studies and Deaf studies, see Michele Friedner and Stefan Helmreich, “Sound Studies Meets Deaf Studies,” *Senses and Society* 7, no. 1 (2012): 72-86. <https://doi.org/10.2752/174589312X13173255802120>; Walter Gershon, *Sound Curriculum*; Michele Friedner and Benjamin Tausig, “The Spoiled and the Salvaged: Modulations of Auditory Value in Bangalore and Bangkok,” in *Remapping Sound Studies*, ed. Gavin Steingo and Jim Sykes (Duke University Press, 2019): 156-172.

sound extends to haptics and visualized sound, as well as the deeper meanings and signification we associate with hearing, listening, communication, language, and design. The field of Deaf studies also provides a connection back to the decolonizing framework of this dissertation, and the constructed dualism of hearing/not hearing that has historically framed normative understandings of Deaf culture. To be Deaf is not to lack hearing, but rather to listen differently, and listening differently is central to this work.

Gershon speaks of “sounds as educational systems of meanings,”⁷⁹ arguing that “sounds... serve as a way to both understand the knowledge a group values and the values embedded in those meanings.”⁸⁰ In the field of education, studies of sound arise from the larger field of sensory studies, which has historically focused on how to teach about the sensorium.⁸¹ In contrast, the literature described here focuses as much on teaching about sound and the senses as on using sound theory as a lens to understand socio-cultural educational values, pedagogies, and philosophies, both overt and covert. While there seem to be nearly endless approaches to researching and thinking about sound in education, what unites most of this work is the idea that, as Gallagher et al. write, “mainstream education promotes impoverished practices of listening, focused on the reception of human meaning as conveyed through spoken language.”⁸² In reviewing the literature around sound studies in education, I focus here on a body of recent research and creative sound art that approaches educational sound studies in the same spirit. My

⁷⁹ Gershon, *Sound Curriculum*, 26.

⁸⁰ Gershon, *Sound Curriculum*, 27.

⁸¹ Walter Gershon, "Introduction: Towards a Sensual Curriculum," *Journal of Curriculum Theorizing* 27, no. 2 (2011), 1. <https://doi.org/10.63997/jct.v27i2.356>.

⁸² Michael Gallagher et al., “Listening Differently: A Pedagogy for Expanded Listening,” *British Educational Research Journal* 43, no. 6 (2017), 1260. <https://doi.org/10.1002/berj.3306>.

goal is to show how this research has inspired and informed the focus and design of my research, as I situate my research between the fields of sound studies and place-based education. My review is grouped into five categories, the first four focused explicitly on educational settings: classroom management, racial and gendered considerations of educational sound, project-based sound and compositional work in classrooms, and sound projects that incorporate environmental themes in outdoor locations. In the last section, I review a few of the more creative works and sound art pieces by social science researchers who use sound methods to expand their own research repertoire to deepen their philosophical inquiry into ideas around sound, environments, education, and experience.

Classroom Management

The ways in which teachers manage speech, silence, noise, sound, and movement in their classrooms is critical to their pedagogy as teachers. Schools have unwritten (and sometimes written) rules about volume and sonic expectations in various school spaces, and these sound management practices carry cultural expectations and practices about the ideal learning environments for students. More research is needed into how teachers learn and adopt these sonic management practices, and what implications they may have on all students. Wargo writes that sound creates boundaries of place and community in educational settings,⁸³ and Gallagher explores that idea that “sound in schools is both the target of power and its mode of operation, pointing towards an enlarged conceptualization

⁸³ Jon Wargo, “Rhythmic Rituals and Emergent Listening: Intra-activity, Sonic Sounds, and Digital Composing with Young Children,” *Journal of Early Childhood Literacy* 17, no. 3 (2017): 399. <https://doi.org/10.1177/1468798417712573>.

of power which includes sound and hearing.”⁸⁴ His study showed how teachers use and enforce silence as a form of power, and even coopt students into the enforcement of silence for the purposes of eliminating distractions while students attend to independent reading and other activity work. Gershon names these practices “sound policing,” which normalize certain types of voices, movement, and sound making identities while creating exclusive environments for non-normative identities.⁸⁵ Brownell’s study builds on Gallagher’s work to show how one teacher’s tone of voice changed when speaking to particularly disruptive students, as well as how this teacher used cell phone alarms to mediate and enforce the timing of events in his classroom.⁸⁶ Additionally, she explores the idea that students quickly picked up on these sonic regimes and registered their protest through semi-conscious sonic objections.⁸⁷ I noted that little research has been done on educational sounds outside the Global North, but one recent study conducted in China shows that the power struggle around sonic expectations and student resistance in schools is widespread. Zhang’s ethnographic research shows how students perform resistance in Chinese schools through a “range of sound acts, including burlesqued noise, subdued murmurs, and its literal absence (i.e., silence).”⁸⁸ Perhaps most importantly for this study, Zhang shows that this educational sonic resistance is directly entwined with China’s emphasis on education as a tool for national empowerment and these students’ limited opportunities for social mobility within societal and economic structures.⁸⁹ In this

⁸⁴ Gallagher, “Sound, Space and Power,” 57.

⁸⁵ Walter Gershon, *Sound Curriculum*, 71-75.

⁸⁶ Cassie J. Brownell, “Sound the Alarm!: Disrupting Sonic Resonances of an English Language Arts Classroom,” *Curriculum Inquiry* 49, no. 5 (2019): 568. <https://doi.org/10.1080/03626784.2019.1671137>.

⁸⁷ Brownell, “Disrupting Sonic Resonances,” 568.

⁸⁸ Min Zhang, “No! I Can’t!: Noise and Silence as Everyday Resistance at a Chinese Suburban Middle School,” *Ethnography* 23, no. 1 (2022): 121. <https://doi.org/10.1177/1466138120910169>.

⁸⁹ Zhang, “Noise and Silence,” 119-123.

way Zhang’s study inspired my exploration of how acoustic resonances in place-based education are symbolic of larger cultural narratives and discourses about the environment and place in US culture. Additionally, the study has implications on how careful sonic design of both indoor and outdoor educational environments may improve the learning community for students and teachers alike.

Sonic Race and Gender in Education

Gershon writes that “in everyday schooling, Black students are held to middle/upper-class Anglo values, norms, and understandings”⁹⁰ with implications for how students speak, act, and are heard and seen in educational environments. Dernikos, citing AT Crawley, argues that historically, whiteness has been constructed around ideals of silence and civility, while Blackness has been equated to loudness, and that these ideas have crept into sonic classroom norms.⁹¹ Her 2020 study challenges the supremacy of silence as an ideal for literacy activities, and encourages educators to consider how these sonic practices and ideals may “harm students who ‘fail’ to feel white or assimilate to white, patriarchal ways of knowing, being and doing.”⁹² While many educators and administrators in the US may not properly attend to these nuances, students have long been inventing and adopting strategies of resistance and adaptation. Fordham has argued that Black female students often adopt quieter personalities like their white female peers or code-switch their language to sound more like Black male and white female

⁹⁰ Walter S. Gershon, “Sound Education: Black Joy, Eugenics, and the Afrosurreal at School,” in *Sonic Studies in Educational Foundations: Echoes, Reverberations, Silences, Noise* ed. Walter S. Gershon and Peter Appelbaum (Routledge, 2019), 157.

⁹¹ Dernikos, “Tuning into ‘Fleshy’ Frequencies,” 142. See also Ashton T. Crawley, *Blackpentacostal Breath: The Aesthetics of Possibility* (Fordham University Press, 2016).

⁹² Dernikos, “Tuning into ‘Fleshy’ Frequencies,” 153.

classmates.⁹³ To Fordham, both silence and speech enacted by these students could be alternately a form of “passing,” and or resistance, as Black female students struggle to make their way in an educational environment that gives them limited pathways for exhibiting their true identity.⁹⁴ Similarly, Wozolek and Wargo have noted how LGBTQ students are often silenced in mainstream educational environments, and their two studies show how creative sonic mapping projects can give voice to LGTBQ students’ ideas and identities.⁹⁵ These studies reiterate the need to attend to students’ different backgrounds and expectations around acoustic ecologies in classrooms, and also imply that we may be failing to unlock a student’s full potential and creativity. Much of the educational sound studies literature I focus on here explores nuances of race, class, and gender, and yet the ways in which different identities relate to the environment and sense of place is a well-known phenomenon. This project aims to contribute to a growing corpus of educational sound studies literature by including ideas from a variety of environmental fields to explore how sonic identities (amongst both teachers and students) also influence and are influenced by human-environment relationships, particularly in place-based educational settings.

Sound-based Educational Projects

Gershon writes that sounds are “educational systems of knowledge that not only make previously hidden understandings audible but can also be utilized materially to

⁹³ Signithia Fordham, “Loud Black Girls,” 10.

⁹⁴ Fordham, “Loud Black Girls,” 6.

⁹⁵ Jon Wargo, “#SoundingOutMySilence: Reading a LGBTQ Youth’s Sonic Cartography as Multimodal (Counter)Storytelling,” *Journal of Adolescent & Adult Literacy* (2018). <https://doi.org/10.1002/jaal.752>. Boni Wozolek, “In 8100 Again: The Sounds of Students Breaking,” *Educational Studies* 54, no. 4 (2018). <https://doi.org/10.1080/00131946.2018.1473869>.

interpret the ordinarily sensible, everyday acts of sense-making.”⁹⁶ Perhaps due to the rise and ubiquity of digital technologies and media, educators and researchers are increasingly inventing and implementing educational sound projects in a wide variety of disciplines by integrating sound and music composition into the curriculum as a way for students to approach content differently, and for researchers and educators to assess student learning. Recent studies have been published on using hip-hop songwriting for English language learning at the secondary school level;⁹⁷ on how songwriting can deepen and increase engagement while learning scientific concepts;⁹⁸ on the relationship between sound, voice, and student identity in educational communities;⁹⁹ on how soundscape, spoken word, and sound design composition can help students to better understand complex scientific ideas in the field of chemistry;¹⁰⁰ and how digital sound composition can enhance classroom reflection at the undergraduate level.¹⁰¹ This list is limited to writing that explicitly engages and is placed within the field of sound studies, but surely the list could be greatly expanded if one were to read other educational projects like these through the lens of the literature I have been describing here. In my own limited

⁹⁶ Walter Gershon, “Vibrational Affect: Sound Theory and Practice in Qualitative Research,” *Cultural Studies & Critical Methodologies* (2013): 2. <https://doi.org/10.1177/1532708613488067>.

⁹⁷ Emery Petchauer, ““Oh boy I ain’t playing no games!”: Making Sense with Youth in the Aural Imaginary,” *English Teaching: Practice & Critique* 19, no. 3 (2020): 365-379. <https://doi.org/10.1108/ETPC-08-2019-0103>.

⁹⁸ Walter S. Gershon and Oded Ben-Horin, “Deepening Inquiry: What Processes of Making Music Can Teach Us about Creativity and Ontology for Inquiry Based Science Education,” *International Journal of Education & the Arts* 15, no. 19 (2014): 1-37. <http://www.ijea.org/v15n19/>.

⁹⁹ Walter S. Gershon, “Sonic Cartography: Mapping Space, Place, Race, and Identity in an Urban Middle School,” *Taboo: The Journal of Culture and Education* 13, no. 1 (2013): 21-45. <https://doi.org/10.31390/taboo.13.1.04>.

¹⁰⁰ Alexis Weaver et al., “Sounding Out Science: The *Sonaphor* and Electronic Sound Design as a Learning Tool in Secondary Science,” *PostDigital Science and Education* 5 (2023): 408-439. <https://doi.org/10.1007/s42438-022-00321-4>.

¹⁰¹ Jon M. Wargo, “Sounding Out Synthesis: Investigating How Educators in a Teaching with Technology Course Use Sonic Composition to Remix Reflection,” *E-Learning and Digital Media* (2020): 1-18. <https://doi.org/10.1177/2042753020902784>.

experiences of doing research in public primary schools, as well as my extensive experience supporting curriculum design and development with international education programs, there seems to be a growing move towards integration of creative and digital forms of expression in a wide range of disciplines. Particularly with my recent work with undergraduate and graduate students in the international experiential education sphere, the rise of AI technologies has encouraged faculty members to wonder how to replace some writing assignments with more creative assignments that are (at the moment) somewhat resistant to the use of AI: podcasts, photo essays, digital stories, films, videos, radio, mapping, and more. While not limited to sound, my point here is to show that, far from being creative anomalies in the field of education, sound-based projects could increasingly become the norm in a variety of educational environments, particularly those where educators place emphasis on responsible, ethical, and creative uses of technology, the arts, and reflection as part of the experiential educational cycle.

Outdoor and Movement-Based Sound Projects

In this section I want to situate my work within outdoor, environmental sound-based projects that incorporate movement into educational initiatives. There is a great deal of scholarship focused on sound and the environment (arising from the fields of ethnomusicology and ecomusicology);¹⁰² on embodied and experiential outdoor and nature-based education (a topic that I will take up more fully in the next chapter); and on soundwalks, musical composition, and sound art in/with nature. The few selections here sit at the intersection of these three areas of literature and creative practice.

¹⁰² See Aaron S. Allen and Kevin Dawe, "Ecomusicologies," in *Current Directions in Ecomusicology: Music, Nature, Environment*, ed. Aaron S. Allen and Kevin Dawe (Routledge, 2016), 1-17.

Gallagher et al. conducted a series of soundwalks along a nature trail with young, pre-literate children and their parents, and found that young children produced mouth and bodily sounds to convey their understandings, interests, and interactions with the places they were moving through.¹⁰³ The researchers detail how students' sound making was symbolic of real and imagined embodied relationships with their surroundings, and yet the parents in the study continually refocused their children's creative sound making back towards literacy and words, perhaps limiting the potential of creative sound play. They write, "Adults often socialize children to focus on a single object of attention (or small number of carefully, rationally selected objects), which is then connected to fixed and concrete meanings (it is a tree; it is green) ... As such, these specific Western middle-class literacy practices foreground not only words (or symbolic representation) but a curation of the world, in which particular aspects of the milieu are selected to be symbolically represented."¹⁰⁴ Adams and Beauchamp conducted a series of music composition projects with 7-10 year-old students in the outdoors, and found that the natural environments encouraged greater sonic creativity as well as unique understandings and uses of outdoor materials.¹⁰⁵ In addition to these learning outcomes, they found that these activities generally improved student focus and behavior.¹⁰⁶ Galloway has incorporated soundwalks and sound art compositions as assignments with music students at the undergraduate level, and found that "By working with

¹⁰³ Michael Gallagher et al., "Vibrations in Place: Sound and Language in Early Childhood Practices," *Educational Studies* 54, no. 4 (2018), 480. <https://doi.org/10.1080/00131946.2018.1476353>.

¹⁰⁴ Gallagher et al., "Vibrations in Place," 476.

¹⁰⁵ Dylan Adams and Gary Beauchamp, "The Impact of Music Making Outdoors on Primary School Aged Pupils (Aged 7-10 Years) in the Soundscape of Nature from the Perspective of Their Primary School Teachers," *Journal of Outdoor and Environmental Education* 24 (2021): 47-48. <https://doi.org/10.1007/s42322-020-00072-5>.

¹⁰⁶ Adams and Beauchamp, "Music Making Outdoors," 43-45, 48-49.

environmental sound and music directly and creatively, students learn how technologies and participatory approaches can be used to convey narratives and social activism, illustrating the importance of embodied knowledge to musicological scholarship.”¹⁰⁷ All three examples suggest that embedding creative sonic assignments and activities into educational activities can inspire students to understand human-environmental connections, as well as to create embodied knowledge about the relationships between humans and place.

Ben Shannon wisely encourages educators and researchers to be cautious about how soundwalks and other creative sound art practices are designed.¹⁰⁸ He argues that students must constantly be centered as the creative engine and composers in these activities, not just passing audience members or listeners, writing that “composition might be one way that soundwalking, and sound studies more broadly, might (in)tend to be anti-racist, anti-ableist, and anti-misogynist.”¹⁰⁹ Gershon conducted a similar study, where a group of urban fifth graders participated in a blindfolded sensory walk in a nearby national forest.¹¹⁰ Among other findings, Gershon noted that de-centering the ocular allowed students to refine their other senses which led to new types of embodied learning.¹¹¹ He also wonders whether writing non-Western considerations of sound and the senses into curricula might further opportunities for embodied learning in nature-based spaces. These studies at once note the power of embedding sonic creativity and

¹⁰⁷ Kate Galloway, “Making and Learning with Environmental Sound: Maker Culture, Ecomusicology, and the Digital Humanities in Music History Pedagogy,” *Journal of Music History Pedagogy* 8, no. 1 (2017): 48.

¹⁰⁸ David Ben Shannon, “What Could be Feminist About Sound Studies?: (in)Audibility in Young Children’s Soundwalking,” *Journal of Public Pedagogies* 4 (2019). <https://doi.org/10.15209/jpp.1178>.

¹⁰⁹ Shannon, “What Could be Feminist About Sound Studies?,” 102.

¹¹⁰ Gershon, “Sounds as Educational Systems,” 76-77.

¹¹¹ Gershon, “Sounds as Educational Systems,” 77-78.

composition into place-based and outdoor learning activities, which have informed the theoretical and methodological design of this dissertation.

Sound Studies and Sound Art

As a musician, I am drawn to the field of sound studies because it is an arena where the arts and social sciences meet in sound. In my life outside of education, I am a guitarist, songwriter, and improviser, and my approach to making live and recorded music is inspired by philosophy and ethnomusicological research and study. Likewise, my identity as a researcher is indebted to my work as a musician, and I approach social science research as a forum for the creation of art in some way, shape, or form. I will dive more deeply into qualitative sound research in the chapter on methodology, and here I want to share a few creative pieces focused on sound by some of the researchers whose work I have already highlighted above. My focus in reading this work has been to understand how these artistic experiments and pieces are in conversation with what might be considered more traditional social scientific research on sound and education, and how creative work and introspection into sonic ecologies in classrooms provides a different way of thinking about sound and education more broadly.

Gershon's meditative piece on reverb and reverberation is both a treatise on the symbolism of sound, and an experiment with sonic scholarship in that the piece has both a written form, and a sonic form that is read by Gershon with musical accompaniment.¹¹² In another study, Gallagher captured field recordings at a historical site in Scotland, and turned those recordings into an audio piece for visitors to listen to as they visit the site

¹¹² Walter S. Gershon, "Reverberations and Reverb: Sound Possibilities for Narrative, Creativity, and Critique," *Qualitative Inquiry* (2018). <https://doi.org/10.1177/1077800418807254>.

(the participants became a part of the study as well).¹¹³ The piece explores how listening to environmental and pre-recorded sound influences our sense of place and geography, which are both critical to this dissertation's mix of sound, experience, and environmental education. Springgay and Truman organize research-creation activities under their WalkingLab project, and many of their events mix sound, art, movement, education, and community building to create knowledge in novel ways.¹¹⁴ Truman and Ben Shannon create movement-based sound art under their names and the band name *Oblique Curiosities*, using sound recording, sound composition, and theory to propose ways that listening and walking can queer exploration of places both familiar and unfamiliar.¹¹⁵ Lastly, my own soundwalking project in collaboration with Daniel Lumonya used sound walks to explore ideas of intersectional climate justice in the small Ugandan city of Entebbe and was a proof of concept for me in the leadup to the main research project of this dissertation.¹¹⁶

This literature review is by no means an exhaustive account of all the creative sound-based and sound-focused research happening in education. Instead, it is a roadmap of the various research and sound art that has informed my background in the field of sound studies. As I show above, the types of outdoor sound art and songwriting projects I

¹¹³ Michael Gallagher, "Sounding Ruins: Reflections on the Production of an 'Audio Drift'," *Cultural Geographies* 22, no. 3 (2015): 467-485. <https://doi.org/10.1177/1474474014542745>.

¹¹⁴ Stephanie Springgay and Sarah E. Truman, "A Transmaterial Approach to Walking Methodologies: Embodiment, Affect, and a Sonic Art Performance," *Body & Society* 23, no. 4 (2017): 27-58. <https://doi.org/10.1177/1357034X17732626>; Springgay Truman, *Walking Methodologies*.

¹¹⁵ Sarah E. Truman and David Ben Shannon, "Queer Sonic Cultures: An Affective Walking-Composing Project," *Capacious: Journal for Emerging Affect Inquiry* 1, no. 3 (2018): 58-77. <https://doi.org/10.22387/CAP2018.19>.

¹¹⁶ Michael Roberts and Daniel Lumonya, "Sound and Situated Knowledge in Entebbe's Urban Wetland Borderlands," in *Intersectional Climate Justice in Eastern Africa*, ed. Neil J. W. Crawford et al. (Bloomsbury, 2025), 63-78.

pursue in this dissertation fit neatly into the field of sound studies as a whole and have the potential to contribute to work by Gershon and others in the rich field of educational sound studies. In the following chapter, I delve more deeply into environmental thought and place-based education practices as I continue to show how the various threads and themes of this dissertation are woven together.

CHAPTER 2 ∞ WISHFUL UNTHINKING: DECOLONIZING SOUND AND NATURE IN EDUCATION

In this chapter I turn to ideas of decoloniality and decolonization to construct a decolonial conceptual framework for research on place, education, sound, and experience. My interest in decolonial theory stems from my experiences in the field of international education, studying outside the US and working at an institution that has made curriculum decolonization a central focus of its undergraduate and graduate programming in more than 40 countries. Though as of this writing I no longer work in international education, the old adage to “think global, act local” was a central tenet of my experiences in international education, and intersects quite well with this dissertation for the ways in which climate change is a global problem that has its causes and effects in very real local situations. It is a long-established fact that the desire for endless growth and economic development in the Global North has been a primary driver of carbon emissions. The effects of this growth paradigm are, unfortunately, experienced and mitigated unequally throughout the world, and it has become central to environmental activist rhetoric in the West that each of us has a small part to play in the climate change crisis.

I believe that decolonial thinking can have an impact on this crisis, yet as I will show throughout this chapter, decolonial theory has become so wide and varied that it can no longer be considered a single theory, but a constellation or rhizome of ideas. For this reason, among others, I am not interested in a dogmatic approach to decolonial theory as a framework for this dissertation, but instead have come to think of decolonial theory as a conversation partner with whom I might discuss and explore ideas. I also find decolonial

theory a convenient way to explore and interrogate ideas of the environment and place-based education in the West.

My goal in this chapter is also to highlight some ways in which arts- and sound-based approaches to place-based education are in alignment with decolonial approaches. Denning has provocatively suggested that recordings of hybridized musical styles and their distribution via gramophone record in the early 20th century kicked off decolonization movements around the world.¹¹⁷ Denning's work shows equally how important sound and music are to decolonial critiques, as well as the applicability of decolonial theory in nearly every academic discipline. Given this, I take very seriously Femi Taiwo's warning that decolonial theory might be getting watered down, uncritically, too many arenas, from academia to political movements, to activism, and the arts, to be truly meaningful anymore. He argues that ideas of colonialism and coloniality have simply become a convenient scapegoat for every problem, big and small, and much decolonial theory ignores the ways in which the colonizer-colonized relationship is co-created through flows of cultural exchange (even if it is within a paradigm of unequal or asymmetrical power relations). About his home continent, he writes that "the ultimate problem with decolonisation discourse is its oft-unapprehended failure to take seriously African agency and the many ways it has grappled with both colonialism and its legacy ... We need to engage with this complexity."¹¹⁸ In this chapter I want to engage with the complexity and chart a decolonizing path that focuses primarily on understanding the

¹¹⁷ Michael Denning, "Decolonizing the Ear: The Transcolonial Reverberations of Vernacular Phonograph Music," in *Audible Empire: Music, Global Politics, Critique*, ed. Ronald Radano and Tejumola Olaniyan (Duke University Press: 2016), 30.

¹¹⁸ Olufemi Taiwo, *Against Decolonisation: Taking African Agency Seriously* (Hurst, 2022), 183-184.

nature/culture binary, its impacts on place-based educational thought, and possibilities for sound-based educational work that disrupt this discursive separation.

Brazilian anthropologist Eduardo Viveiros de Castro similarly casts doubt on decoloniality as a concept, arguing that intellectual critiques of Western dualism amount mostly to “wishful unthinking.”¹¹⁹ I take Viveiros de Castro’s term as a title for this chapter as a reminder that this is primarily a hopeful and exploratory epistemic decolonization, applied not to a political or national project, but to a small corner of progressive education in what might be called, in decolonial discourse, a settler-colonial context. Additionally, I find this term attractive as a description for one of the arguments I make throughout this work, which is that one form of decolonizing education is to continue to rebalance the relationship between embodied knowledge and discursive thinking. “Wishful unthinking” is therefore also an apt term for decentering the ocular in education by paying attention to the rich field of sound and sensory experience in place-based education.

My approach is not perfectly in step with Eve Tuck and K. Wayne Yang’s argument that “Decolonization is not a metonym for social justice,”¹²⁰ and should only ever be about “Indigenous sovereignty and futurity.”¹²¹ While keeping these urgent messages in mind, I argue that there is a path for non-Indigenous researchers, artists, and activists from settler colonial cultures to do introspective, epistemic work on understanding how colonial ideas of nature/culture are deeply tied to institutions and

¹¹⁹ Eduardo Viveiros de Castro, “Cosmological Deixis and Amerindian Perspectivism,” *The Journal of the Royal Anthropological Institute* 4, no. 3 (1998), 470. <https://doi.org/10.2307/3034157>.

¹²⁰ Tuck and Yang, “Decolonization is Not a Metaphor,” 21.

¹²¹ Tuck & Yang, “Decolonization is Not a Metaphor,” 35.

processes of extractive capitalism. Greenwood has argued that for white settlers like us, “rehabitation: learning to live well in place with others” is the sister of decolonization, and a way to balance both the political aims of decolonization and the introspective and historical work of reinstating important non-extractive ways of living.¹²² In my research, I position deep listening and creative composition as tools for wishfully unthinking colonial thought in hopes that we might sing our way into closer relationship with the more-than-human world around us, potentially offering a new ethics and pedagogy of care and responsibility. It is important to note that these are complex theories and topics, beyond the scope of most primary and early childhood educators and their students. My mobilization of decoloniality as a concept focuses primarily on researcher thinking and teacher pedagogy, not necessarily the hearts and souls of young learners, and I try to bring to this framework the same love and compassion for decoloniality that I inherited from the many scholars, activists, development practitioners, and colleagues I collaborated with during my time in the international education sector. From them I learned that decolonization is not a metaphor, it is an act of hope expressed through relationships and knowledge sharing, human and more-than-human.¹²³

This chapter is separated into two main sections. The first section describes my decolonial conceptual framework (or, as I have written above, conversation partner). To get to the specifics, I start by situating my study within some foundational decolonial thought that has been important to me as a researcher and explore experiential learning

¹²² David Addington Greenwood, “Place, Land, and the Decolonization of the Settler Soul,” *The Journal of Environmental Education* 50, no. 4-6 (2019): 364. <https://doi.org/10.1080/00958964.2019.1687412>.

¹²³ I am most indebted to Cheikh Thiam, Daniel Lumonya, Charlotte Mafumbo, Taieb Belghazi, and Stewart Chirova for conversations on the topic of decolonization/decoloniality. I would like to direct the reader back to the acknowledgements of this dissertation for further notes of gratitude.

and its relationship to decolonizing approaches to education. The second part is a literature review of recent research on decolonial approaches to research and pedagogy in place-based educational contexts that have inspired my study. Throughout the conceptual framework, there are two facets of Taiwo's work that guide my thinking. First, I want to be wary of the recent trend to seemingly blame everything on colonialism. Western culture (or any culture) is not monolithic, and I remain convinced that the goals of this research—developing an ethics and pedagogy of care and responsibility for humans and nonhumans around issues of environmental justice—might be achieved through a cultivation of Western ideas about the world that have not been able to flourish under the guises of economic growth mindsets, capitalism, and extraction. I draw optimism from Greenwood's idea of reinhabitation, and hope to amplify the wonder, possibility, and joy that children in the US bring to place-based educational spaces as one way of highlighting reinhabitation.

As I illustrated in the opening chapter, when young children engage in place-based educational spaces, different types of emotions, thoughts, and collective project-based energies emerge that are often hard to engage in the indoor classroom. Affrica Taylor has argued that “when children spontaneously take the persona of other beings or animate and attribute subjectivities to other entities, they are effectively ignoring the onto-epistemological boundaries that divide the world into humans and the rest. This is presumably because they have not yet been fully acculturated into the foundational binary traditions of western education, whereby ‘we’ (as the superior knowing human subjects) learn how to separate ourselves from the world that we learn ‘about’ (as the object of our

superior knowledge systems).”¹²⁴ There is much handwringing about how youth will inherit the climate catastrophes that previous generations have set in motion, and yet not enough is being done in the US to truly listen to these primary stakeholders of the future. We therefore have a responsibility to give them the framework and tools, whether they are arts-based, activist-based, science-based, or something else entirely, to tackle wicked problems. This idea of responsibility to future generations is also central to many Indigenous cosmologies. At the heart of Taiwo’s critique is that many scholars lack focus when applying decolonial theory, and I believe the field of sound studies provides a framework for listening differently to children and the complexity of their feelings and actions in place-based educational settings.

The second lesson I take from Taiwo is that we need to be as precise as possible about what facet of colonialism we are interrogating.¹²⁵ In this dissertation, my focus is on the nature/culture dualism, an artery of Western thought centered on the idea that human culture is separate or unique from the natural world. As the literature review in this chapter will show, there is a strong segment of researchers already taking up this case, arguing that traditional education reinforces this binary in some ways. In response, these researchers explore ways to design place-based educational activities that support human entanglements with nonhumans and environmental processes and systems. To that end, though rooted in decolonizing approaches, I also touch on multispecies ethnographic work, which is linked to and arises in some circles from Latin American discourses on

¹²⁴ Affrica Taylor, “Beyond stewardship: Common World Pedagogies for the Anthropocene,” *Environmental Education Research* 23, no. 10 (2017), 1456. <https://doi.org/10.1080/13504622.2017.1325452>.

¹²⁵ Taiwo, *Against Decolonisation*, 16-17.

decoloniality. Ideas from the world of new materialism show up occasionally throughout the literature review as well, particularly when those theories intersect with other Indigenous ontologies. I touch on them lightly here to acknowledge the influence they have had on my research, their presence in the literature, and their connection to Indigenous ontologies. My intention in this chapter is to build a foundation from which to do the important work of exploring and challenging normative notions of what it means to be alive, to be human, to think, to feel, to relate, and to communicate; and in education, what it means to teach young learners about these ideas. At the heart of this project is a belief that educational practices are far too limited, often focused on a narrow set of practices that prioritize literacy, numeracy, and cerebral learning. By bringing sound studies and decolonial approaches to place-based studies together, I show how practices and methodologies from both fields can help us question the nature of human learning, and human learning about nature.

Decolonization and Decoloniality

Theories and movements of decolonization arise from mid-20th century post-colonial liberation movements and liberation theology in the Global South. Frantz Fanon was the first to fully theorize a movement for psychological, social, cultural, and political decolonization, and his work lives on in many activist and academic threads around the topic.¹²⁶ In recent years, decolonization has moved beyond political spheres, and epistemic and ontological decolonization is a growing trend at educational institutions around the world. In Latin America, the idea of decoloniality has emerged as an onto-

¹²⁶ See Frantz Fanon, *The Wretched of the Earth* (Grove Press, 1963).

epistemic movement (as opposed to initial settler decolonization movements, which were political).¹²⁷ Walter Mignolo defines decoloniality as a “means first to delink (to detach) from that overall structure of knowledge in order to engage in an epistemic reconstitution. Reconstitution of what? Of ways of thinking, languages, ways of life and being in the world that the rhetoric of modernity disavowed and the logic of coloniality implement.”¹²⁸ Arturo Escobar, who has focused on the complex ways that development, culture, activism, and the environment are co-dependent, defines decoloniality work as uncovering and acting against Western dualisms of nature/culture, male/female, Black/white, mind/body, South/North, subject/object, and many more.¹²⁹

This distinction between what might be called political decolonization, and epistemic or ontological decolonization is an important one, and is the source of Olufemi Taiwo’s challenge to decolonial discourse. Taiwo refers to the former as “decolonisation1” which he describes as “making a colony into a self-governing entity with its political and economic fortunes under its own direction.”¹³⁰ This is the original decolonization that Fanon dreamed of, and yet it soon became clear in postcolonial sites throughout the Global South that political decolonization was inadequate to meeting the task of providing true freedom in postcolonial nation states, particularly as European colonial powers continued to control the mechanisms of resource extraction and distribution, models of education and governance, and flows of capital for nation-

¹²⁷ For a more nuanced argument against epistemic decolonization without political and economic decolonization in contemporary settler-colonial nation-states, see Tuck and Yang, “Decolonization is Not a Metaphor,” 1-40.

¹²⁸ Alvina Hoffman, “Interview - Walter Mignolo/Part 2: Key Concepts,” Last modified January 21, 2017, <https://www.e-ir.info/2017/01/21/interview-walter-mignolopart-2-key-concepts/>, para. 8.

¹²⁹ Arturo Escobar, *Designs for the Pluriverse: Radical Interdependence, Autonomy, and the Making of Worlds*, (Duke University Press, 2017), 80-100.

¹³⁰ Taiwo, *Against Decolonisation*, 3.

building and development. Kwame Nkrumah has called this contemporary situation “neo-colonialism” where the state is ostensibly politically free, yet the “economic system and thus its political policy is directed from the outside.”¹³¹ Under neo-colonialism, it is not hard to see how spheres far beyond the political and economic remain deeply and intractably influenced by the colonial imposition, particularly in the field of education. And yet for Taiwo, moving discourses of decolonization into the realm of “cultural studies,”¹³² what he calls “decolonisation2”¹³³ simply provides a convenient if outdated scapegoat for many of the lingering problems that the Global South faces. He argues that by attributing any and every problem to colonialism’s long shadow, we devalue both Indigenous agency as well as the many positive contributions of Western science, art, and philosophy, even if they are tangled up in the colonial project. In a roundabout way, Taiwo’s work is linked to Tuck and Yang’s, since both argue that the primary goal of decolonization is the physical movement of settlers away from settler colonial states, and the dismantling of their political and economic empires.

I am interested in Taiwo’s argument and mention it here because I find a measure of truth in it; however, it is also overly simplistic, and from here I want to make the continued argument for using the term “decoloniality” (and not decolonization or “decolonisation2”) throughout this chapter and dissertation, because of that term’s focus on epistemic decolonization and the recognition that it is still intrinsically tied to ideas and movements for social justice and social change. To provide a personal example, as an international educator working in East Africa I have observed how public health

¹³¹ Kwame Nkrumah, *Neo-Colonialism: The Last Stage of Imperialism*, (Panaf Books, 1965/2004), ix.

¹³² Olufemi Taiwo, *Against Decolonisation: Taking African Agency Seriously*, (London: Hurst, 2022), 4.

¹³³ Taiwo, 3.

measures and medications founded in Western science have saved lives in impoverished communities, and the people there are very happy to have cures to their ailments. And yet at the same time, this current condition of impoverishment and ill health is attributable in large part to the neo-colonial state of affairs and the capitalist system which brings with it great avenues for wealth generation for a few, and high levels of inequality for the rest.¹³⁴ What Taiwo labels “decolonisation2” is therefore most similar to current definitions of the term decoloniality. The only difference is that decoloniality encompasses the complexities of a global market-driven capitalist system, facilitated by corporations and factories in the Global North, aided and abetted by their national governments which continue to create and support the institutions needed for growth. Taiwo’s definition seems to gloss over the interconnectedness of these issues, and the lack of autonomy and agency of many nation-states in the Global South. Ndlovu-Gatsheni writes that the word “coloniality” originated in Latin America “to name the continuation of colonialism beyond its physical dismantlement...”¹³⁵ It follows that decoloniality, as Nelson Maldonado-Torres defines it, is “the dismantling of relations of power and conceptions of knowledge that foment the reproduction of racial, gender, and geo-political hierarchies that came into being or found new and more powerful forms of expression in the modern/colonial world.”¹³⁶ I have dwelled on this discussion in order to grapple with the complexity of the term as a precursor to how I mobilize these ideas in this dissertation. Decoloniality as a framework for this dissertation therefore encompasses the importance

¹³⁴ See Walter Rodney, *How Europe Underdeveloped Africa* (Verso, 1972/2018).

¹³⁵ Sabelo J. Ndlovu-Gatsheni, “Discourses of Decolonization/Decoloniality,” *Papers on Language and Literature* 55, no. 3 (2019): 3. <https://eref.uni-bayreuth.de/id/eprint/69213>.

¹³⁶ Ndlovu-Gatsheni, “Discourses of Decolonization/Decoloniality,” 4-5.

of considering how institutional educations are linked to national projects, and in the case of the US that means a type of hyperactive extractivist-capitalist approach to economic growth at all costs, which I argue has been foundational to public education in our country from the very beginning.

To turn back to the context of this work, US society, government, and educational institutions are built on philosophical, discursive, and material coloniality that has both enriched this country with material wealth while causing irreparable damage to the climate, and it will take time, activism, and introspection to uncover the full effects. Given that Western development narratives frame social well-being in terms of progress (usually towards westernized notions of wealth generation and prosperity) scholars prefer to speak of decoloniality as a process, linked to a new conception of economic development,¹³⁷ (or perhaps it would be more accurate¹³⁷ to say economic configurations or degrowth, to remove the idea of infinite financial gain) based on something other than capitalism and the growth paradigm. Decoloniality as a concept is therefore a powerful tool for thinking about education, which in the US is a powerful institution with many threads and movements that deeply influence what young people do when they go out into the world. Within the realm of place-based education, to decolonize the nature/culture binary means to think more deeply about the ways in which we humans are always already parts of nature, rather than separate from it, and to recognize a pluriverse (as opposed to a singular universe) of more-than-human subjective realities. There is no

¹³⁷ For an in-depth critique of the ways in which Western progress narratives intersect with conceptions of US teaching of ecology, see Chet Bowers, "How Language Limits Our Understanding of Environmental Education," *Environmental Education Research* 7, no. 2 (2001): 141-151. <https://doi.org/10.1080/13504620120043144>.

one right way to conceive of or compose this onto-epistemological reunification with nature, and numerous examples from both Western philosophy and Indigenous cultures offer possibilities. Escobar, for example, writes of relationality as an idea that “nothing preexists the relations that constitute it.”¹³⁸ In Escobar’s relational onto-epistemological framework, treating animals, plants, or the Earth as resources for capitalist gain becomes fraught with ethical implications since extractivism of relational beings and materials would entail a destruction of what it means to be human. Bagele Chilisa writes of *ubuntu*, a “relational axiology” from the Bantu in southern Africa that unites both living beings (human, nonhuman) and nonliving through “spirituality, love, harmony, and community building.”¹³⁹ Donna Haraway urges us to “Make Kin, Not Babies”¹⁴⁰ with companion species through speculative fabulation and techno-projects. Andean Indigenous peoples have inspired the governments of Ecuador, Bolivia, and Peru to adapt within their constitutions a movement of Buen Vivir, an idea that “aspires to collective well-being through reciprocity, complementarity, and relationality principles.”¹⁴¹ And Affrica Taylor, borrowing Latour’s term and applying it to place-based education, prefers to speak of “common worlds” to define and compose the messy and entangled relations between human and more-than-human in place-based classrooms.¹⁴²

In all this work, I hear Bowers call to place-based educators (and researchers like myself) to carefully think about how language and pedagogy influences the ways in

¹³⁸ Escobar, *Designs for the Pluriverse*, 101.

¹³⁹ Bagele Chilisa, *Indigenous Research Methodologies* (Sage, 2012), 117-118.

¹⁴⁰ Haraway, *Staying with the Trouble*, 102.

¹⁴¹ Andrea Jimenez et al., “A Decolonial Approach to Innovation? Building Paths Towards Buen Vivir,” *The Journal of Development Studies* 58, no. 9 (2022), 1636-1637. <https://doi.org/10.1080/00220388.2022.2043281>.

¹⁴² Affrica Taylor, *Reconfiguring the Natures of Childhood* (Routledge, 2013), 63.

which young people learn to relate to the materials, humans, and non-humans that make up their worlds.¹⁴³ Much like decolonizing approaches to place-based research, studies of sound in educational contexts focus on nuances and sensory experiences that are ignored or hidden in educational curricula, and as I highlighted in the previous chapter, educational sound studies focus on the socio-cultural ways that we interpret some sounds as beautiful, interesting, and educative and others as annoying, unnecessary, or noise (another binary that this dissertation seeks to deconstruct). Given that this nature/culture binary is at the heart of this project, I want to focus next on what decoloniality means specifically for the nature/culture binary while centering sound and sensory experience as primary channels for thinking about how to understand and view the world.

The Nature/Culture Binary

Escobar has argued that decoloniality primarily targets a set of binaries inscribed in Western philosophical and scientific traditions, and the binary that I explore most prominently here is the nature/culture binary, specifically some lines of Western educational thought that perpetuate a narrative that human culture is separate from nature.¹⁴⁴ These discourses educate students to conceive of a possible human mastery over nature, and they can be found in Western-style schools, both in and out of the Western world. Within this mindset, nature is simultaneously romanticized and conceived of as in need of a salvation that only humans can provide.¹⁴⁵ To decolonize these practices during a time of global environmental crisis, decolonial scholars of place-based education emphasize a need for a deeper attunement to nuance, sensory experiences,

¹⁴³ Bowers, "How Language Limits Our Understanding of Environmental Education," 141-142.

¹⁴⁴ Escobar, *Designs for the Pluriverse*, 80-100.

¹⁴⁵ Nxumalo and Cedillo, "Decolonizing Place," 100.

embodied knowledge, and relationality with non-humans and more-than-humans as we strive for a sense of place that is relational and non-hierarchical. According to this ontology, to be human is to be composed of the relationships that create both humans and non-humans, living and nonliving. These ideas are central to many Indigenous ontologies and cosmologies around the world, and they are also now emerging in Western scientific and social scientific fields. Place-based educational classrooms in Vermont, which mix traditional indoor, standards-based learning with outdoor and place-based activities, are therefore an interesting venue for collaborating with teachers and administrators to meditate on the historical ways we relate to our environment, and to build new possibilities and pathways for students to connect with critters and places.

Anthropologist Viveiros de Castro argues that many Amerindian Indigenous cultures are centered around an animist ontology which believe in animal subjectivity, with stories and folklore upholding the idea that bodies are mere costumes hiding animals' inner personhood.¹⁴⁶ In ontologies where animals are people with their desires, histories, and mythologies, “the space between nature and society is itself social,” compared to Western cultures, where the conception is that nature (or natural biological processes) are the thread between humans and nonhumans.¹⁴⁷ To Viveiros de Castro, this makes all the difference in how our societies are constructed: if nonhumans are subjects, then they have souls, moral capacities, and personhood,¹⁴⁸ whereas in Western ontologies, nonhumans might be biologically constructed of the same matter as animals (our cells, atoms, bacteria, blood, bones, etc.) but are restricted from the same moral rights,

¹⁴⁶ Viveiros de Castro, “Cosmological Deixis,” 470-472.

¹⁴⁷ Viveiros de Castro, “Cosmological Deixis,” 473.

¹⁴⁸ Viveiros de Castro, “Cosmological Deixis,” 476.

spirituality, and personhood that humans are owed because we humans are made in the likeness of a monotheistic God. We see direct effects of these lines of thinking in societies and various government structures in different nation-states. In the US for example, corporations have the same rights as people, while environmental protections seem to be pitted against policies that support economic development. Compare this to Ecuador, where the constitution was changed (in 2008) to give nature personhood.¹⁴⁹ Of course, in the US there are many prominent movements from Indigenous and settler communities alike pushing back against laws like these, but laws and constitutional rulings indicate a sense of normative policy priorities.

Within Amerindian Indigenous language structures, the names of various nonhumans are collective pronouns, not nouns, intended to show the subjectivity and shared personhood between humans and nonhumans.¹⁵⁰ To jump across the ocean briefly, this also resonates with Kenyan author Ngũgĩ wa Thiong'o's work on the links between language and colonization. Ngũgĩ argues that colonization is like a "cultural bomb" which destroys Indigenous culture through the slow grind of colonial and institutional nation building.¹⁵¹ As a child growing up in a farming village, Ngũgĩ was exposed to stories about animals, riddles, and musical language games that taught him about his culture, and reinforced the idea that language is a product of a specific place and human relationship to that place.¹⁵² He adds that "Language was not a mere string of words. It

¹⁴⁹ Jimenez et al., "A Decolonial Approach to Innovation?," 1636-1637.

¹⁵⁰ Viveiros de Castro, "Cosmological Deixis," 470-472.

¹⁵¹ Ngũgĩ wa Thiongo, *Decolonising the Mind: The Politics of Language in African Literature* (James Currey, 1986/2008), 3.

¹⁵² Thiongo, *Decolonising the Mind*, 10-11.

had a suggestive power well beyond the immediate and lexical meaning.”¹⁵³ To Ngũgĩ, and I suspect to other speakers of Indigenous languages (or any language, for that matter), language loses some its power, beauty, context, and meaning when it is separated from its oral sound, and from its place in the world. A decolonial approach to learning about and being in nature therefore requires consideration of how language *and* sound define and dictate our viewpoints and the positions we take. The students in the class where this research takes place speak a language that was not born in this place. What can we do to compose our way towards rethinking how language, sounds, and songs can build connections to place?

For Viveiros de Castro, it is not simply language and sound, but all bodily sensory experience that is critical to a decolonial approach to nature and culture. I quote Viveiros de Castro at length here because his description is so rich and entangled with many of the issues of sound and sense I have been exploring throughout:

Animals see in the *same* way as we do *different* things because their bodies are different from ours. I am not referring to physiological differences—as far as that is concerned, Amerindians recognize a basic uniformity of bodies—but rather to affects, dispositions or capacities which render the body of every species unique: what it eats, how it communicates, where it lives, whether it is gregarious or solitary, and so forth. The visible shape of the body is a powerful sign of these differences in affect... Thus, what I call 'body' is not a synonym for distinctive substance or fixed shape; it is an assemblage of affects or ways of being that constitute a *habitus*. Between the formal subjectivity of souls and the substantial materiality of organisms there is an intermediate plane which is occupied by the body as a bundle of affects and capacities and which is the origin of perspectives.¹⁵⁴

Here, to me, is the heart of thinking about sound and sense as critical for a decolonial approach: all bodies (human, nonhuman) have ways of embodied knowing, bound up in

¹⁵³ Thiongo, *Decolonising the Mind*, 11.

¹⁵⁴ Viveiros de Castro, “Cosmological Deixis,” 478.

their cultural upbringings, life experiences, neurodiverse ways of thinking, and unique affectual perceptions, which dictate how they understand the world around them, both natural and cultural. These differences (and similarities) dictate both how we hear the world *and* creates the preconditions for an ethics of responsibility and reciprocity for creatures of all kinds, what Viveiros de Castro calls “multinaturalism.”¹⁵⁵ To consider decolonial approaches to experience and education, I want to raise the question of how educators in a settler colonial context, where the harmony of language, environment, story, and sensory experience is broken or imposed¹⁵⁶ move towards decolonial ways of thinking, listening, and enacting pedagogy in place-based educational settings. I want to continue to ponder this question in two ways: first through an exploration of some multispecies theoretical work, which I consider to be a Western approach to thinking about reciprocal care for the environment; and then through the lens of experiential education, its history, and possible decolonial variants.

Multispecies Entanglements

Dylan Robinson argues that rather than continuing to uphold another Western/Indigenous binary when trying to solve these problems, we should look for relationships between Indigenous and Western theoretical frameworks. His work shows that new materialist theory and multispecies ethnographic work are philosophically and politically tied to Indigenous and decolonizing epistemologies. Robinson touches on new materialist theory to consider what agency or power sound may have, even as he shows how “the ‘more-than-human’ agency described in new materialism and non-

¹⁵⁵ Viveiros de Castro, “Cosmological Deixis,” 472.

¹⁵⁶ Thiongo, *Decolonising the Mind*, 11.

representational theory has long been a quotidian fact of Indigenous lives and epistemologies.”¹⁵⁷ He writes, “Considering non-representational theory and Indigenous epistemologies alongside each other can here provide a more nuanced understanding of nonhuman relations and can help move beyond the anthropomorphism that reinforces the subject’s mastery over an object.”¹⁵⁸

To place-based educators, it is a somewhat obvious truth that to learn about other species, one must be in, around, and with other species as part of the process of learning. Multispecies theory provides a framework for this notion, arising from the idea that humans are “formed and transformed amid encounters with multiple species of plants, animals, fungi, and microbes.”¹⁵⁹ Multispecies ethnographies often use the tools of both scientists, social scientists, and artists to try to understand complex environmental systems, issues, and problems. Eduardo Kohn’s version of multispecies ethnographic work in the Amazon provides the strongest framework for how multispecies ethnographic work informs this dissertation, particularly for the ways in which Kohn’s work arises from decolonial practices (in this case from Latin American decoloniality threads I have focused on above).¹⁶⁰ Kohn also grapples with the nature/culture binary not by considering the innate properties of all matter and the similarities therein, but rather by troubling what thought or thinking is. He writes:

To recognize living thoughts, and the ecology of selves to which they give rise, underscores that there is something unique to life: life thinks; stones don’t. The goal here is not to name some essential vital force, or to create a new dualism to

¹⁵⁷ Robinson, *Hungry Listening*, 79.

¹⁵⁸ Robinson, *Hungry Listening*, 79.

¹⁵⁹ Eben Kirksey, Craig Schuetze, and Stefan Helmreich, “Introduction: Tactics of Multispecies Ethnography,” in *The Multispecies Salon*, ed. Eben Kirksey (Duke University Press, 2014).

¹⁶⁰ Eduardo Kohn, *How Forests Think: Toward an Anthropology Beyond the Human* (University of California Press, 2013).

replace those old ones that severed humans from the rest of life and the world. The goal, rather, is to understand some of the special properties of lives and thoughts, which are obscured when we theorize humans and nonhumans, and their interactions, in terms of materiality or in terms of our assumptions (often hidden) about symbolically based linguistic relationality.¹⁶¹

Kohn's proposition is that thought is not uniquely human, and that plants and non-human animals also think in their own unique ways. Kohn's focus is not a philosophical argument about thought or agency, but rather a social scientific investigation of exactly how thought or agency is happening out there in the real, messy world of multispecies interactions. Much of Kohn's multispecies work arises from the notion that creative and artistic impulses are needed for inquiry and representation of this knowledge.

Kohn's writing has already been utilized by practitioners of sound studies in education, primarily Michael Gallagher, covered in the last chapter, whose research mobilized Kohn's work (via American philosopher Charles Sanders Peirce) on indexical, iconic, and symbolic representations of sound to think about how educators in one study channeled childhood language-learning increasingly towards words and away from non-linguistic (iconic or indexical) sounds. But Kohn's work also provides yet another framework for thinking about the place-based educational space as alive, complexly intertwined, agentic, and deserving of greater attention by educators and students. Within new materialist and multispecies ethnographic frameworks, sound is both an agentic material and a symbol of the biotic lifeforms in any environment. The sounds and songs of the world are non-linguistic communication systems that demand us to consider our relationship or responsibility to animal songs, geologic sonic happenings, and tree murmurings, even if these sounds happen outside the realm of human hearing or

¹⁶¹ Kohn, *How Forests Think*, 100.

interpretation. In the age of the Anthropocene, we humans are in desperate need of a set of skills and practices that allow us to listen to and compose with the world around us. This includes the urgent need to also listen to humans who may hold differing political and world views, and to harness commonalities in experience even as we recognize asymmetrical power imbalances.

Decolonizing Place-based Education

In this section I outline my decolonial approach to thinking about nature through an examination of extractive ideas in Western cultures and how those ideas influence conceptions of environmental education pedagogy. Experiential education has long been the educational paradigm in non-traditional settings (i.e. place-based, outdoor, service-learning, international education, and more). Jay Roberts writes that in the past century experiential education has seen three major ongoing variations, which he frames as experience as interaction, embodied experience, and experience as praxis.¹⁶² Experience as interaction, the Deweyian approach, views experience as “a form of associated living and interaction.” Embodied experiential education is focused on “individual meaning-making and transformation.” And experience as praxis “views experience in a much more political sense, either as a tool for reproducing inequalities or as a means for counter-hegemonic emancipation.”¹⁶³ Roberts shows how these variations emerged chronologically throughout the 20th century, but did not supersede the previous variation. Roberts finds merit in all three approaches, and I weave all three paradigms together in this dissertation’s mix of place-based community building, arts-based learning, and

¹⁶² Jay Roberts, “From Experience to Neo-Experiential Education: Variations on a Theme,” *Journal of Experiential Education* 31, no. 1 (2008), 19. <https://doi.org/10.1177/105382590803100104>.

¹⁶³ Roberts, “Neo-Experiential Education,” 27.

decolonial theory. In the “experience as interaction” paradigm, I expand Dewey’s democratic, human-centered community building approach to think about how experience can create community between humans and nonhumans. Second, the sound-based, arts-based approach of this work is highly focused on embodied, emotional learning through art, song, and story as powerful tools for transformation. Lastly, I utilize decolonial theories and frameworks to center the importance of power and privilege in environmental interactions.

While experiential education is certainly a more progressive form of education than the standard classroom-based model, it is not intrinsically decolonial. I wrote about John Dewey in the opening pages of this dissertation as a foundational figure in experiential education, and his work is certainly a product of its modernist times, focused on developing an educational experience that is “tied to issues of citizenship and community.”¹⁶⁴ For Dewey, that community was primarily a human community, and so his view of experiential education was necessarily limited to his own cultural worldview and the people inside it.¹⁶⁵ As the literature review at the end of this chapter will show, learning opportunities that put students out into the actual flow of communities, natural spaces, and real-world experiences of any sort are already far advanced in terms of pushing students towards relational educational experiences. It becomes hard to “other” something or someone when you are engaging directly and repeatedly. But a truly decolonial approach to education would also reach for a pedagogical design that

¹⁶⁴ Roberts, “Neo-Experiential Education,” 23. See also John Dewey, *Experience and Education*. Collier Books, 1938/1974).

¹⁶⁵ Dewey’s celebration of the scientific method also leaves little room for valuing non-Western epistemologies.

reinforces that the student is not the only thinking, learning, subject in the experience. Decolonial approaches to experiential education therefore focus more on the interaction between species and how they affect each other in both biological and emotional ways, rather than simply trying to understand natural processes as if we humans are distant observers. In doing so, we also recognize that our experiences out in the world do not happen in a vacuum but rather affect and alter the world as we are learning about it. In cross-cultural situations, we need to focus on how our interactions with others are pre-infused with political power imbalances, and to attend to those imbalances in respectful and reciprocal ways (thinking with Viveiros de Castro, encountering animals in the woods can be considered a cross-cultural or multi-natural situation, rife with possibility but also power imbalances). A decolonial approach to experiential education foregrounds an ethics of engagement by cutting off, in its very design, the idea that education is a commodity. It is an education where students and educators learn about and story the deep connections between humans and their environments, inspiring care and compassion for relationships across human and interspecies cultures.

Nature and Technology in the Digital Age

Place-based education is enjoying a resurgence in the Vermont school where this dissertation takes place, thanks in part to recent human entanglements with the highly contagious SARS-CoV-2 coronavirus which spreads most easily in indoor environments. While the COVID-19 pandemic may have accelerated some schools' plans to offer instruction outdoors, place-based education has been steadily gaining steam around the world, in no small part as a reaction to the ubiquity of mobile computer technology and recognition of global environmental crises in the last half century. Though these trends

are contemporary, place-based education as an idea in the West has been around for over two centuries, and in this iteration, as before, is deeply tied to conceptions of childhood innocence, technology, and the nature/culture binary. In this section I introduce place-based education as a concept and consider various colonial or decolonial approaches to nature and education. As I outlined in the first half of this chapter, forces of extractive capitalism have depended on turning nature and humans into resources for the extraction of wealth, and today activists, scholars, and artists from both Western and Indigenous communities are putting up a strong resistance to these forces. I listen to both Western and Indigenous scholars who seek to redefine, rebuild, and solidify the connections between humans and their environments, along with some educational projects and pedagogies that exemplify this work.

In the remainder of this chapter, I focus on approaches to an educational environment that is open and attuned to how sonic and sensory nuances can help deepen the work of environmental place-based education, particularly for primary school and early education students. In New England, the work of the transcendentalists is central to a US approach to place-based education,¹⁶⁶ and I build off Thoreau's work with a brief exploration of broad trends in the field of place-based education and the ways in which the current move towards place-based education is a response to the growth of digital technologies. Finally, at the end of this section, I situate my work within recent literature and trends in place-based education to conceptualize how current trends in decolonial

¹⁶⁶ For a personal account of Thoreau's influence on one seminal environmental educator's work, see David A. Gruenewald, "Teaching and Learning with Thoreau: Honoring Critique, Experimentation, Wholeness, and the Places Where We Live," *Harvard Educational Review* 17, no. 4 (2002): 515-541. <https://doi.org/10.17763/haer.72.4.002577367146333n>.

place-based education and educational sound studies provide a landscape/soundscape for this dissertation.

Since Thoreau's seminal work, place-based education has grown in popularity, most recently due to increasing recognition of human-caused climate change as well as rapid and ubiquitous developments in computer technology and digital communication. Increasingly, teachers, parents, scholars, and administrators are pushing back against objectivist and science-focused approaches to nature, arguing that what young learners lack most is direct experiences in nature (unmediated by digital technology).¹⁶⁷ Today, ideas of "nature connectedness" show up frequently in studies and arguments for place-based education, indicators that despite a shift in understanding around rational scientific discourses on place-based education, the nature/culture binary remains (one can only be reconnected to something, or "in" something, that they are positioned as in some way philosophically or materially separated from).¹⁶⁸ David Sobel, who takes a student-development focused practitioner approach to environmental education, has proposed that children's distance from nature, perpetuated by media saturation around environmental catastrophe combined with a lack of actual experiences in nature, has led to a sort of "ecophobia" amongst young people. He argues that experiences in natural spaces are critical for both student development and awareness of environmental injustices. Sobel's reputation and impact are undeniable, but Affrica Taylor argues that within his paradigm there is a trace of the idea that nature is something we are separated from and can learn

¹⁶⁷ Taylor, *Reconfiguring the Natures of Childhood*, 47.

¹⁶⁸ Tina Braun and Paul Dierkes, "Connecting Students to Nature: How Intensity of Nature Experience and Student Age Influence the Success of Outdoor Education Programs," *Environmental Education Research* 23, no. 7 (2017): 937-949. <https://doi.org/10.1080/13504622.2016.1214866>.

from, rather than something that is intrinsic to human culture.¹⁶⁹ Sobel is an international figure in the world of place-based education, and his message has been most impactful in northern New England where he has inspired and mentored hundreds of educators as a professor at Antioch University in Keene, NH. After years of collaborations with many of his proteges, I find Taylor's argument more powerful in theory than in practice.

Regardless of the nuances, these regional trends and national discourses have been successful in supporting teachers, schools, and families to pursue place-based education. At the same time, these discourses narrow the preconditions and pedagogical approaches to place-based education by demonizing the very idea of human technology while imagining a purist, technology-free world that has never existed. Perhaps no scholar has written more provocatively and thoughtfully about how technology and nature interface than Donna Haraway, who encourages us to “stay with the trouble” that these intersections produce by both rejecting the “comic faith in technofixes (or techno-apocalypses)” and finding ways to “embrace situated technical projects and their people.”¹⁷⁰ Her practice and promotion of “speculative fabulation,” creative art that imagines beautiful and strange technological futures,¹⁷¹ is a hallmark of much artistic work in the environmental humanities (and is an idea that guides the last chapter of this dissertation). In other words, this means working in the space between those who rigidly oppose and avoid digital technologies, and those who think these technologies will be a saving grace for climate change, capitalism, and the ills of modernity. One way this dissertation takes up this call is through the utilization of digital sound recording

¹⁶⁹ Taylor, *Reconfiguring the Natures of Childhood*, 47.

¹⁷⁰ Haraway, *Staying with the Trouble*, 3.

¹⁷¹ Haraway, *Staying with the Trouble*, 213.

technologies as tools for sonic research and participatory sonic inquiry with students. Staying with the trouble also means resisting the urge to come to firm or settled conclusions, to keep discussing and wondering. I hear resonances between Haraway's work and much of the scholarship on epistemic ontological decolonization which encourages us to challenge the institutions and philosophies which define our ways of being in, thinking about, and learning about the world. Within this history of nature and education, what does it mean to decolonize place-based education?

Literature Review: Decolonizing Approaches to Place-based Education

Though place-based education has been intrinsic to Western primary schooling for centuries, in this section I describe new decolonizing approaches to place-based education which are increasingly proliferating in Western contexts. This research takes many forms, and the primary goal of many of these researchers is broadly "to unsettle the dominance of cognitive developmental, and individual humanist perspectives in understanding young children's learning, particularly in relation to the natural world."¹⁷² As with Robinson's approach above, this decolonial work slips easily between decolonial philosophical Western frameworks (such as post-humanist developments and multispecies theories) to considerations of Indigenous frameworks and their decolonial movements, both global and local, epistemological and ontological. These studies are situated within the context of global climate change and environmental injustice, and they raise important questions about traditional learning outcomes and their relative success within the fields of environmental and place-based education. What are the limitations to

¹⁷² Fikile Nxumalo and Marleen Villaneuva, "Decolonial Water Stories: Affective Pedagogies with Young Children," *Journal of Early Childhood Environmental Education* 7, no. 1 (2019): 40. <https://doi.org/10.58295/2375-3668.1390>.

educational approaches to science and nature as we tackle the urgent challenges of a rapidly changing planet? What are the limits to the Western environmentalist movement? Given the complexities of climate change and climate change mitigation, can scientific approaches alone provide adequate solutions? Or do we need more interdisciplinary approaches to both education, advocacy, and activism around environmental injustice? What knowledge, skills, tools, and resources do environmental educators and students need, and what are the challenges and opportunities for meeting these needs? While some of these studies do not explicitly state these questions, they linger urgently at the periphery. The question of how sonic inquiry provides another tool for co-creating interspecies knowledge is also integral to this review.

Nature in Children's Literature

Teresa Lloro-Bidart argues that portrayals of non-human beings are found everywhere in schools through curricula, books, and activities, and yet these sources typically define animals and plants as objects without agency or identity, fit only for gazing upon, dissecting, or investigating for human knowledge. These discourses create and reinforce the nature/culture divide, influence narratives around race, gender, and identity in entangled human/non-human ways, and influence how students think about place and the environment whether they are in or out of the classroom.¹⁷³ In response, Lloro-Bidart argues that multispecies ethnography as a form of methodology, which interrogates the ways that human and non-human culture is collaboratively created through assemblages of relationships and events, is a welcome and even necessary form

¹⁷³ Teresa Lloro-Bidart, "A Feminist Posthumanist Multispecies Ethnography for Educational Studies," *Educational Studies* 54, no. 3 (2018), 263. <https://doi.org/10.1080/00131946.2017.1413370>.

of research in educational spaces of all varieties. Lloro-Bidart also wonders at the possibilities for multispecies educational ethnography to enhance conceptions of intersectionality by further emphasizing and interrogating the cultural politics of intra and interspecies difference.¹⁷⁴

The place-based classroom where this study takes place is rich with stories of creatures, both from books and songs, and in the creative work that students undertake. Understanding the impact of those stories is critical to my research, and Taylor and Pacini-Ketchabaw provide some specific examples of how child-animal discourses can be formed at the earliest ages through children's books and narratives. In their specific example which is worth elaborating on here, they describe the bilby, a native marsupial in Australia that resembles the invasive rabbits that were introduced by European settlers in the mid-1800s. Due to growth in Australian rabbit populations, as well as the introduction of foxes and cats, the bilbies have become endangered species in their native Australia.¹⁷⁵ As a response to these trends, numerous children's books have been written which, in typical children's book fashion, turn animals and children into protagonists in stories with not-so-subtle messages about settler culture and conservation. These stories allowed the bilby to enter the mainstream, with Australian settler children often featured in a variety of media and consumer products as the potential heroes in a conservation effort to save the innocent powerless bilby from the European rabbit, often depicted as an "evil colonial invading force."¹⁷⁶ Though fictitious, these stories present powerful ahistorical narratives

¹⁷⁴ Lloro-Bidart, "Multispecies Ethnography," 261-263.

¹⁷⁵ Affrica Taylor and Veronica Pacini-Ketchabaw, "Children, Bilbies, and Spirit Bears: A Decolonising Ethics of Ecological Reconciliation," in *The Common Worlds of Children and Animals: Relational Ethics for Entangled Lives*, ed. Affrica Taylor and Veronica Pacini-Ketchabaw (Routledge), 66.

¹⁷⁶ Taylor and Pacini-Ketchabaw, "A Decolonising Ethics," 69.

that work to redirect attention from the damage and destruction caused by human settlement, as they allow the construction of a narrative where settler Australians “escape taking responsibility for the cascading ecological effects of introducing rabbits in the first place, but simultaneously recast themselves and their progeny as the redemptive heroes – the ones who will save good ‘native’ Australia from the evil ‘invasive’ rabbits.”¹⁷⁷ In these stories, Aboriginal people are written out of the narrative often completely, setting up a racist and paternalistic dynamic between settler and Indigenous where only settler people have the knowledge, skills, passion, and wherewithal to save Indigenous animals like the bilby. The case of the bilby in Australia is an excellent example of Lloro-Bidart’s argument that human-animal depictions in books and curricula begin to build the colonial framework that often depicts human interactions with nonhumans as either destructive or conservational. Books like these are an essential tool in the Vermont place-based classroom where this takes place, and as a participant in this activity several years ago, I was fascinated with the ways in which students seem to adopt this type of anthropomorphized narrative about animals into their songs, and what those characters and their trials and tribulations said about the students’ experiences in their place-based classroom.

While Taylor and Pacini-Ketchabaw provide a framework for decolonizing narratives of nature inside the classroom, Nxumalo and Cedillo track the rise of interest in outdoor place-based educational programs in settler contexts and highlight some possibilities for considering how Indigenous, Black feminist, and post-humanist frameworks can provide decolonizing approaches to early childhood outdoor education.

¹⁷⁷ Taylor and Pacini-Ketchabaw, “A Decolonising Ethics,” 70.

Nxumalo and Cedillo note that early childhood place-based education seems to be growing, in part due to recent narratives which recycle Western colonial notions of environmental saviorism, climate change, and the age-old idea that “children and nature belong together, as sites of innocence and purity.”¹⁷⁸ And yet decolonizing approaches to early education can often be challenging for educators and administrators, due to personal bias and the notion that our youngest learners may not be ready to face the political realities of discussing the many environmental and social damages caused by settler colonialism. Nxumalo and Cedillo argue that Indigenous African and North American frameworks point to the possibility of stories to begin this decolonizing work in early education. They write that “Thinking of place as storied might serve as entry toward discussions of and encounters with specific Indigenous place relations, including specific Indigenous cosmologies and relationalities with more-than-human others in specific lands.”¹⁷⁹ This type of thinking can easily slip into the de-politicized play-acting noted by Tuck and Yang, and so Nxumalo and Cedillo note that these discussions must always be accompanied by some level of political discussion in settler contexts, which can and should be done in age-appropriate ways. The authors propose that Black feminist geographies, which highlight the lingering damage and legacy of human slavery and institutional racism, provide a similar entry point for decolonizing approaches to place-based education “because they center place and space as key signifiers of materialized and spatialized inequity.”¹⁸⁰ Furthermore, they write that Black feminist decolonizing work in place-based education brings together a mix of questions about whiteness as

¹⁷⁸ Nxumalo and Cedillo, “Decolonizing Place,” 101.

¹⁷⁹ Nxumalo and Cedillo, “Decolonizing Place,” 103.

¹⁸⁰ Nxumalo and Cedillo, “Decolonizing Place,” 105.

property and land rights, and cultural narratives around access and opportunity to education and outdoor spaces.¹⁸¹ Cedillo and Nxumalo also advocate for a posthumanism and new materialism that incorporates Indigenous and Black approaches to ensure that that political history of our interaction with matter does not get lost.¹⁸² These ideas are central to my own thinking and approach to research, and in the final chapters of this dissertation, I show how teachers in one rural place-based classroom attended to the politics of interspecies relations in vernacular ways.

Student-Animal Interactions in the Place-based Classroom

The above work highlights that our understandings of place and the environment are often heavily influenced by socio-cultural traditions, literature, and institutions at a very young age. Two more articles written by Fikile Nxumalo provide more specific storied interactions with animals to highlight how colonial/decolonial theory meets practice in early education spaces. The first, by Pacini-Ketchabaw and Nxumalo, focuses on a place-based school in British Columbia where raccoons repeatedly cross the nature/culture divide in spatial, ontological, and bacterial ways.¹⁸³ The case-study provides an example of the ways that educators, administrators, and facilities staff sought to keep this boundary in place despite the raccoons insistence on moving in (as well as a potential ethnographic methodological approach for my study). While the article highlights some of the pedagogical and philosophical underpinnings of this nature/culture divide, perhaps the main takeaway is the ways in which our perceptions of childhood

¹⁸¹ Nxumalo and Cedillo, "Decolonizing Place," 107.

¹⁸² Nxumalo and Cedillo, "Decolonizing Place," 107-108.

¹⁸³ Veronica Pacini-Ketchabaw and Fikile Nxumalo, "Unruly Raccoons and Troubled Educators: Nature/Culture Divides in a Childcare Centre," *Environmental Humanities* 7, (2015): 151-168. <https://doi.org/10.1215/22011919-3616380>.

innocence and an increasingly litigious North American human culture lead school policies towards unreasonable notions of sanitation and hygiene in place-based settings. The authors write that, “These colonial assumptions about cleanliness, about being safe from the ‘filthy’ and ‘infectious’ aspects of nature, shape the practices we deem so important in childcare centre pedagogies.”¹⁸⁴ It is these practices, often enforced and designed by administrators and political bodies, that keep these nature/culture divides in place despite the best laid efforts of many educators, and they have resonance in the classroom where this research takes place as I show in chapter 5. The case also shows that simply being outside the classroom may often have little impact on increasing the awareness and possibility for human-nonhuman interactions.

In the second article, Nxumalo writes of children’s interactions with bees at another school in British Columbia. The students in this class started by learning about bees in distant, objective ways through books and other activities, but in subsequent weeks, the students noticed many dead and dying bees at an apple tree outside the school. The dead bees suddenly prompted a new line of inquiry, and their morbidity (and inability to potentially sting the children) allowed the students a closer look. The students and teachers learned about pollination and undertook a project to pollinate the apple tree with paint brushes, which began to highlight bee-human entanglements in agentic ways.¹⁸⁵ They later collected the bees and brought them inside to look closely and touch their bodies. Nxumalo writes that “in these moments the touch, affect and embodied

¹⁸⁴ Pacini-Ketchabaw and Nxumalo, “Unruly Raccoons,” 160.

¹⁸⁵ Fikile Nxumalo, “Stories for Living on a Damaged Planet: Environmental Education in a Preschool Classroom,” *Journal of Early Childhood Research* 16, no. 2 (2018): 152. <https://doi.org/10.1177/1476718X17715499>.

materiality of bee death all matter as modes of knowledge-making that enact new worldings of responsive curiosity.”¹⁸⁶ Case studies like this show how sensory inquiry can be an important age-appropriate tool for deeper learning and interacting with outdoor educational spaces, evidence that place-based educational pedagogy is about more than just bringing students outside and seeing what happens. These types of interactions with animals, both real and imagined, animated much of my fieldwork and student-critter encounters are central to the narratives detailed in chapters 5 and 6.

Student Interactions with More-than-human Matter in Place-based Classrooms

The types of experiences detailed above are too infrequent in educational settings, and I want to situate my research in another area of study which highlights the importance of haptic, embodied, and sensory experiences with forms of non-living, yet still agentic, matter. In one ethnographic study, Pacini-Ketchabaw and Clark study how water is mobilized and characterized only as a resource, to be extracted and used for human use as a source of nourishment and also as an educational tool for describing the scientific process.¹⁸⁷ The two argue that educators and students need to get closer to water and create different relationships and pedagogical activities with it “by responding to water’s unknown qualities rather than attempting to master water (a colonial drive) and to see ourselves in water for the benefit of children’s learning.”¹⁸⁸ They also mobilize Spivak’s postcolonial theory to position water as a subaltern force, an actant with thing-

¹⁸⁶ Nxumalo, “Damaged Planet,” 156.

¹⁸⁷ Veronica Pacini- Ketchabaw and Vanessa Clark, “Following Watery Relations in Early Childhood Pedagogies,” *Journal of Early Childhood Research* 14, no. 1 (2016), 99. <https://doi.org/10.1177/1476718X14529281>.

¹⁸⁸ Pacini-Ketchabaw and Clark, “Watery Relations,” 100.

power.¹⁸⁹ They advocate that paying attention to this power differential between human and water holds powerful political as well as environmental lessons. In this work, I want to connect theory to practice by analyzing teacher responses to play-based experiences and their implications for a decolonial place-based pedagogy.

Pauliina Rautio takes up similar material questions through an investigation of the seemingly ubiquitous practice of children picking up and collecting stones. Through her study she questions the traditional educational model where educators curate a distinct group of materials for students. In this case, Rautio is hyper-focused on the materials that children mobilize on their own without adult intervention. To the question of why children carry stones, she poses that perhaps it is the stones very nature that invites children, writing simply that sometimes “people choose to do things that make them feel alive.”¹⁹⁰ Rautio’s suggestion that educators often fail to notice the materials, entanglements, and impulses of young children’s learning with nature, holds major implications for the idea of sound and creative song as another understudied material in environmental education. Rautio wonders if the research methods that intend to center children often do the opposite, and that research methods that better attend to the multiple and nuanced haptic, sensory, and embodied ways that education happens in all classrooms might help educators and administrators to cross the nature/culture divide.

What the field of sound studies and these decolonial trends in place-based education share is the importance of the arts of noticing nuances and the importance of

¹⁸⁹ Pacini-Ketchabaw and Clark, “Watery Relations,” 100.

¹⁹⁰ Pauliina Rautio, “Children Who Carry Stones in Their Pockets: On Autotelic Material Practices in Everyday Life,” *Children’s Geographies* 11, no. 4 (2013): 396, 400.
<https://doi.org/10.1080/14733285.2013.812278>.

embodied understandings of the world. These studies all invite wonder about the unnoticed ways that children may be mobilizing sound in their imaginary and very real world of indoor and outdoor spaces through creative dramatic play and arts-based activities, and what this may say about children's early conceptions of nature and culture. While none of the studies focus explicitly on sound, they share a creative approach to thinking about how pedagogy is designed, and what students' place-based educational experiences might signify about larger cultural trends around the environment and our educational settings.

CHAPTER 3 ∞ METHODOLOGY: QUALITATIVE SOUND METHODS AND ETHICS

Educational sound studies have focused on capturing and analyzing ambient sound in educational settings; on sound as power and discipline in classrooms; and sound creation as a form of learning. To approach these three dimensions of sound in schools, this study was designed as a two-part process with both phases occurring in the same public pre-kindergarten classroom in Vermont. The first part, which took place in March and April of 2025, focused on the use of qualitative sound methods to document, describe, and analyze the unique sonic qualities of this classroom. The second part focused on a songwriting unit that took place from late April to May of 2025. In this chapter, I first describe my research questions, providing some basic introductory context for how I arrived at these questions. Next, I turn to the research procedures—the qualitative sound methodologies—used for the two phases of the research project. For the first phase, I show how sonic ethnography and sonic geography provided the theory and tools needed to investigate how sound, placemaking, and education are interwoven. In the second phase, I utilized research-creation and sound art methods and methodologies, showing how a compositional approach to research informed my fieldwork during the songwriting unit. Following this, I more fully describe the research context and design of the study with details about data collection, analysis, and interpretive methods for the various phases of the study. Finally, in the last section of this chapter I discuss the ethical implications and limitations of the study, many of which were embedded in the unique nature of the qualitative sound methods needed to conduct the study.

Research Questions

The purpose of this study was to determine how human-environmental relationships and human/more-than-human connections and ideas are made and molded through sound in schools. Through audio recording, deep listening, participant observation, unstructured interviews, and artifact review, I explored the following questions:

- How does sound create place and place create sound in a place-based classroom? Who are the contributors of this educational sonic ecology, from humans to animals to weather, and how does the built environment of the school and the forest classroom influence that sound production and resonance?
- How do teachers use sound and song to structure time and create routines in a pre-kindergarten classroom, and how do students participate in or disrupt that teacher-designed sonic world?
- How can songwriting activities give students agency over educational sound design and inspire creative, storied, placemaking in a forest classroom?
- Furthermore, what can we learn about decolonial pedagogy, decoloniality, and place-based education through an investigation of student-teacher interactions and the various play-based moments that occur in the classroom?

During my research I tuned in and made audio recordings of all the sounds and silences: the whispering, talking, and yelling; the spoken and unspoken rules about who speaks, sings, and moves during which portions of the day; the songs and dances that teachers use to build community and create a sonic educational experience; the imaginary play with all its dramatic movements, creative soundtracking, and physical-emotional

world building; the differences between the sounds of a structured lesson versus unstructured play time; the ways in which interactions (sonic, visual, haptic, olfactory, and taste) with more-than-human subjects in the forest classroom open up teachable moments and change the trajectory of the school day; the ways in which seasonal changes and weather events cause perceptible shifts in the mood and sounds of the classroom, along with how those events alter the trajectory of the day's play-based and lesson-based activities; how all classrooms are limited but porous sonic spaces and how this opens possibilities for more interactions with the world outside of what we traditionally consider to be a learning environment; and much more. Starting in March, I was listening for a sort of sonic baseline in the classroom, with all its variations and nuances. Later in the spring, with the start of the songwriting unit, I planned to focus on how the students' original songs both arose from this sonic world and changed it, how the songs came from within these students and their entanglements with their multispecies community in their forest classroom, and from the mysterious spirit of creativity that is so hard to pin down. My research focused on what their songs might say about their relationships to the human and more-than-human creatures in the space as it pertains to some of the decolonial thinking I outlined in the previous chapter.

In short, I was researching both ambient sound and intentionally created sound, looking for how school setting, teachers, and students situated their learning in sonic relations. Walter Benjamin argues that new technological possibilities for artistic reproduction and distribution separate art from its context, from the "aura" that is unique to the relationship of any piece of art and the cultural and environmental context where it

was created and meant to be consumed.¹⁹¹ This research setting was of unique interest to me because already in its design and intention it offered a two-phase approach to first understand the importance of sound and song in an educational space, and then an opportunity to see how the songwriting unit allowed students to reinvent that “aura” in a way that appealed to helping each student meld embodied learning, song, place, and emotion into a living artifact of their relationship with the forest classroom and educational space. My focus was on documenting the songs and sounds that existed before, during, and after the songwriting unit, and wondering at how songwriting might bring students closer into the ecology of sounds, happenings, and relationships present in the forest classroom, an idea that is inspired by a decolonial and non-extractive way of being in the forest and learning about the environment.

For as long as this pre-kindergarten class has existed (about seven years now), the teachers in this class start each day with the same song that is meant to gather everyone together in community. At the beginning of the year, they asked if I could write a new song for the class as a precursor to our work together. At this point I had not yet met any of the students, so I had little knowledge of their personalities and interests, though I had spent some time in the class as an invited guest in previous years, and during a previous iteration of this songwriting project. I proposed some lyric ideas that were immediately rejected by the teachers for not having enough embedded movement. I had not realized that for these students, singing was already automatically an opportunity for movement

¹⁹¹ Walter Benjamin, “The Work of Art in the Age of Mechanical Reproduction,” Originally published in 1936, last modified February 2005, <https://www.marxists.org/reference/subject/philosophy/works/ge/benjamin.htm>, section III.

and participation, and I clearly had not understood my audience. I kept working and we ended with the following, which is set to some basic movements:

We're touching our toes, we're tapping our knees

We sing to the birds and stretch to the trees

We come here to learn, to have fun and play

In Wildwood Forest we welcome the day

This song is already a collaborative attempt with teachers at classroom sound design, one that begins the process of bringing the “aura” of the songs in closer alignment with the teaching culture of the place itself, which is then necessarily more place-based, more attuned to the forest space with all its critters and plants and fungi, and of course more appropriate to the abilities of four- and five-year-olds. The songwriting project with students took this impulse to its next logical step, democratizing the song environment and allowing students an active role in the sonic design of their classroom and educational experience. As I showed in previous chapters, these types of songwriting, sound walking, and sound art activities are proliferating in progressive education settings and educational sound studies research.

Research Procedures: Qualitative Sound Methodologies

The emergence of sound methods in educational settings (particularly when practiced by musicians and deep listeners) originates in Bresler’s methodological musings that “Our engagement as musicians with the fluidity of sound and music ... can sensitize us to the fluidity of personal and cultural experience, the heart of qualitative

research.”¹⁹² In this dissertation I utilized a mix of qualitative sound methods, and my procedures were curated differently for the two phases of the project. In the first research phase, I used methods common to sonic ethnographers and geographers, including focused listening, audio recording, participant observation, and interviews. In this first phase I adhered more to traditional forms of social scientific inquiry, and while my fieldwork period was too short to fully claim this project as a sonic ethnography, it is ethnographic in approach. While I continued to capture rich audio recordings during the second half of my fieldwork, I became more of a musician and producer than researcher, and my methods mirror those practitioners of sound walks and walking methodologies, both theory-driven and collaborative approaches to creating land-based and place-based works of sound and movement-based art. While both approaches are united by sound, each methodology approaches sound methods a bit differently, and my own methods and practices are unique to my experiences, ways of listening, and the specific demands of the research site. At the heart of my work, regardless of method, is an insistence that sounds and senses are critical to the ways in which we humans (researchers, musicians, teachers and students) experience the world and make meaning out of those experiences.

Phase 1: Sonic Ethnography and Sonic Geography

My research procedures throughout this dissertation are primarily inspired by Walter Gershon, whose scholarship¹⁹³ and mentorship (as a committee member) were key to my research design and procedures. At Gershon’s urging, I utilized multiple separate

¹⁹² Liora Bresler, “What Musicianship Can Teach Educational Research,” *Music Education Research* 7, no. 2 (2005):170.

¹⁹³ Walter Gershon, *Sound Curriculum*.

handheld sound recording devices, two identical Zoom H1n handheld devices and a cheap \$20 device that I purchased for student use. While indoors, I used just one of the H1n devices, which I typically hung from a hook in the center of the classroom, or moved to other locations based on classroom activities. Outdoors, I hung both Zoom recording devices from trees in two separate parts of the forest classroom to create a stereo recording of the space. I moved these around from day to day based on student and teacher recommendations, changes in the season and play patterns, and sometimes just because it felt like the right thing to do. Whenever students became interested in my sound recording work, I pulled out my smaller, cheaper microphone and allowed them to make recordings of the classroom, their movement, their singing, and anything else they felt like recording. I also occasionally asked them where I should place my devices, and they gave suggestions (some places were better than others for capturing sound). In addition to sound recording, I utilized participant observation, artifact review (mostly books, class materials and signs, student artwork, and of course, song lyrics) and unstructured interviews with the teachers to gather my data.¹⁹⁴ I considered the conversations I had with teachers and students as part of the larger ecology of sounds, and these unstructured interviews had equal standing in the sonic data as other sonic moments. An interview is one of the primary ways in which researchers seek out information, but to put voice on a level playing field with other ambient sounds meant that the placement of my sound recorders and the timing of my visits did as much to ask questions and seek information as a traditional interview would. In this way, during my

¹⁹⁴ The term “interview” is a stretch. I had casual conversations with the teachers when time allowed during the school day. We never sat down for a formal interview, and the conversations we had were analyzed and interpreted along with the larger pool of sound recordings and memos.

fieldwork period I generated upwards of 100 hours of sound recordings, and my handwritten notes and memos became key in navigating these sound recordings, unstructured interviews and conversations, and ecologies of sounds during the analysis phase.

Through these rich sound recordings and my memos and notes, I was able to approach the educational sonic world as a sort of performance of educational values. These methods allowed me to hear the students-as-co-researchers outside of a sound-as-text paradigm to see what listening and thinking through sound and sound technologies could reveal about the ecologies of sound in this pre-kindergarten classroom. In this sonic inquiry project, sound was both a method and a phenomenon of study. Students were, in a sense, co-researchers and participants in the creation of sonic and embodied knowledge. The inspiration and practices in my dissertation were drawn from Gershon's own dissertation (and subsequent research) where he developed sonic ethnographic practices over a multiple-year dissertation study focused on the question of "whether writing songs about science might help bridge race and gender gaps in science education."¹⁹⁵ In the process of the study, Gershon's methods slowly shifted towards the exclusively sonic, and while Gershon initially utilized typical ethnographic tools like participant observation, memo writing, interviewing, and artifact analysis, he later shifted his focus towards meticulous audio recordings of the classrooms, students, and teachers.¹⁹⁶ I was trained in traditional ethnographic research and Gershon's transition to a sounded framework¹⁹⁷ was

¹⁹⁵ Gershon, *Sound Curriculum*, 133.

¹⁹⁶ Gershon, *Sound Curriculum*, 133-142.

¹⁹⁷ See Walter Gershon, "Sonic Ethnography in Theory in Practice," in *Oxford Research Encyclopedia of Education* (Oxford University Press, 2019), 1-24 <https://doi.org/10.1093/acrefore/9780190264093.013.547>

empowering and encouraging for me. As a result, my approach to sound recording and deep listening positioned students as co-researchers and co-creators of sound yet scaled to their abilities as younger learners.

The idea of “sonic” ethnography may seem relatively novel, but sound recording has long been a component of ethnography and other forms of qualitative inquiry. In this phase I adhered quite closely to standard processes of traditional ethnographic work through multi-method data collection and unstructured time at the research site. For me, the main difference in defining this as “sonic” ethnography was that my research questions were focused on the ecology of sounds, and my audio recordings stayed as recordings: I never transcribed sounds into text until the writing phase. Instead, deep and repetitive listening in the moment and of my recordings informed the interpretation and analysis of findings, which focused on uncovering and confirming themes that were sustained throughout the fieldwork period, and generalizable across similar place-based educational programs. To that end, while I did not visit any other classrooms outside of this school during my study, I asked teachers about their pedagogical approach to classroom sound design (my term, not theirs) and song. The teachers in this class certainly had their own unique set of songs, sonic cues, and the class had its own “sonic dialect,”¹⁹⁸ which was a co-created through dialogue between the sonic actors within the educators’ curricular sound design. But teachers were quick to note that song, movement, and play were considered best practices amongst early educators in their networks and the school district. As a result, I believe this work both highlights the unique ecology of

¹⁹⁸ David Matless, “Sonic Geography in a Nature Region,” *Social & Cultural Geography* 6, no. 5 (2005): 750.

sounds and songs in this classroom while also showing its relatability and applicability across a range of early childhood, primary education, and place-based educational settings.

My research procedures centered sound and listening but were not exclusively aural. My use of ethnographic tools, sonic and otherwise, was inspired by Sarah Pink's work on sensory ethnography which highlights the ways in which human experience is emplaced, embodied, and sensory; and articulates the need for ethnographers (and their co-researchers) to attend to the senses in more nuanced ways. Pink writes that early scholarship on embodiment worked to "deconstruct the notion of a mind/body divide, to understand the body not simply as a source of experience and activity that would be rationalized and/or controlled by the mind, but itself as a source of knowledge and subsequently agency."¹⁹⁹ The idea that sensory experiences are intrinsically valuable, not simply as sources of cognitive learning for outcomes-based initiatives, was critical to my approach to listening and observing, leading to several of the themes developed in chapters 4 and 5. The young stars of this research were an impressively energetic group, and in the play-based environment of the classroom where this fieldwork took place, simple sensory joys were central to students' school experience. I utilized Pink's theoretical approach to ethnography to keep my focus on these sensory nuances and non-teleological impulses that might otherwise have passed me by. Pink's work was also critical in my efforts to understand how these young students were growing, learning, and changing as a result of their embodied experiences with the world, how these little

¹⁹⁹ Sarah Pink, *Doing Sensory Ethnography, 2nd Edition* (Los Angeles: Sage, 2015), 26.

humans were getting tangled up in the assemblages of critters and matter of the place.²⁰⁰ Sensory ethnography as a research paradigm gave me a framework for understanding how sounds and sensory inputs connected their young bodies to the ecosystems around them in non-discursive, ineffable ways.

While I started with ethnography, Gershon encouraged me to explore sonic geography²⁰¹ as a methodology because my interests were circling around the ways in which multiple factors (some human, most more-than-human) create educational place through sound. Michelle Duffy writes that utilizing audio recording, deep listening, and collaborative sonic methodologies for geographic study is informed by the idea that “our social relationships help comprise particular spatial contexts, and sounds provide a range of affective affordances appropriated by individuals to deeply inform not only how to move and mingle but crucially how to think. The meanings we attribute to those sounds we do note reflect our values, our lives, our aspirations.”²⁰² In a sonic geographic approach, sound is understood as a phenomenon to think about how sounds of all kinds make place in a dynamic, ephemeral, and constantly flowing process. I was inspired by Gallagher and Prior’s approach to sonic geography,²⁰³ which was not exclusively auditory, but rather started with and centered sound, and then looked to the visual, the textual, the haptic, and more as additional research elements. They write that using the sonic in geographic research can help researchers and participants to “access some of the

²⁰⁰ Pink, *Sensory Ethnography*, 27.

²⁰¹ Michael Gallagher and Jonathan Prior, “Sonic Geographies: Exploring Phonographic Methods,” *Progress in Human Geography* 38, no. 2 (2014), 267-284. <https://doi.org/10.1177/0309132513481014>.

²⁰² Michelle Duffy, “Sound Ecologies,” *Cultural Studies Review* 16, no. 1 (2010), 43-44. <https://doi.org/10.5130/csr.v16i1.1445>.

²⁰³ Gallagher and Prior, “Sonic Geographies,” 267-269.

more-than-representational aspects of their everyday experiences of place: the immaterial, invisible, taken-for-granted atmospheres and emotional resonances of their local area.”²⁰⁴ Sonic geographers, much like sonic ethnographers, rely on deep listening and audio recordings, but the focus is intrinsically on the relationship between humans and place, and the ways that they co-create each other. Inspired by these sonic geographic approaches and the decentering of human sounding, I set out to listen and capture sound recordings to explore the ways in which the classroom is a sonic space, made through human constructions of song, speech, movement, silence, and rhythms, but also entangled in the forest beings and matter, as well as the built school environment.

Phase 2: Songwriting and Research-Creation

Songwriting and composition are central to the design of this project, with learning outcomes focused on helping students feel curious about embodied similarities and empathies across species to foster environmental care. During this same activity in 2023, students wrote songs about the animals they encountered in their forest classroom and daily life and channeled their own emotions and feelings into those characters. They imagined themselves as real and imaginary creatures, and they created scenarios about how those creatures would interact—physically and emotionally—with the world around them. Inspired by my experiences in 2023, my research methodology focused on being an artistic partner to these young songwriters to explore how that songwriting process can transform human learning in unique embodied ways, leading to new avenues for expressing and experiencing environmental empathy. In this way, this sonic inquiry

²⁰⁴ Gallagher and Prior, “Sonic Geographies,” 269.

project draws from research-creation approaches that take a theory-driven approach to creative expression, with a focus on process over product. In this dissertation, I drew inspiration from Springgay and Truman's event-focused and movement-based work, a type of research-creation that they call walking methodologies. While walking methodologies with a research-creation framework can have many different forms, Springgay and Truman focus on four major themes of place, sensory inquiry, embodiment, and rhythm,²⁰⁵ which fit the focus of this dissertation quite well. Within these themes, the pair have facilitated a variety of projects, from community walks for families focused on settler-colonial themes, to experimental sound art compositions, to public school community arts projects in watershed areas. Theory drives the creation of the projects, with the event and process itself being the culmination of the work (an exhibition or performance), rather than a middle-point of data collection for researcher analysis and interpretation. In line with Manning and Massumi's work, I also was inspired by the idea of research-creation as a resistance to the "neoliberalization of research," the concomitant domination of quantitative research in the social sciences, and the publish or perish frenzy now firmly established in US higher education.²⁰⁶ Increasingly I came to think of the songwriting project as a theory-driven artistic event, designed in such a way that the students and teachers, not the researcher, would take center stage. This approach also had important ethical dimensions, which I detail in the last section of this chapter.

²⁰⁵ Springgay and Truman, *Walking Methodologies*, 4-5.

²⁰⁶ Erin Manning and Brian Massumi, *Thought in the Act: Passages in the Ecology of Expression* (University of Minnesota Press, 2014), 84-85.

I want to take a moment to revisit how this type of compositional sound work is in some ways a pre-requisite for practitioners in the field of sound studies, as theory-driven sound art has been a core element of the field of sound studies since its inception, and this history of blending research with artistic creativity is a primary inspiration for my work. The practice of soundwalks emerged out of the World Soundscape Project of the 1960's and 70's, led by composers/researchers R. Murray Schaefer and Hildegard Westerkamp among others, and is inextricably linked to the development of sound studies as a discrete field of study.²⁰⁷ Westerkamp has written that a soundwalk is “any excursion whose main purpose is listening to the environment. It is exposing our ears to every sound around us no matter where we are.”²⁰⁸ Since then, scholars have begun to differentiate soundwalks, which typically involve the active use of sound recording technology in some way, from listening walks, which do not include the “mediation of electronic technologies.”²⁰⁹ Most importantly for this work, composers and educators often use sound and listening walks in a variety of educational settings as a method to encourage the development of listening and composing skills amongst students of all ages. Soundwalks arise from methods and methodologies for movement and inquiry about sensing, understanding, and creating place, and since the beginning, the focus has also been on possibilities for human and non-human relationality in those places. The practice of soundwalking intrinsically invites a focus on ephemeral, improvisational, and unpredictable learning possibilities. Paquette and McCartney trace the roots of soundwalks all the way back to Thoreau, who,

²⁰⁷ David Paquette and Andra McCartney, “Soundwalking and the Bodily Exploration of Places,” *Canadian Journal of Communication* 37, (2012): 138. <https://doi.org/10.22230/cjc.2012v37n1a2543>.

²⁰⁸ Hildegard Westerkamp, “Soundwalking,” *Sound Heritage* 3, no. 4 (1974, revised 2001): para. 1.

²⁰⁹ Gallagher et al., “Listening Differently,” 1252.

as noted earlier, was fascinated with both walking and sensory experience.²¹⁰ As mentioned, I conducted my own soundwalk research project in Uganda²¹¹ in the midst of my studies, and while it did not become part of this dissertation, it inspired my thinking about the ways in which sound could be a placemaking thread across the multiple indoor and outdoor educational spaces of this fieldwork site.

My approach to educational movement- and land-based sound art was inspired by David Ben Shannon, a sound researcher and early childhood educator in the UK who argues against pedagogical approaches to sound-based activities that de-politicize, neutralize, and flatten sound and listening.²¹² In contrast, his work considers “how soundwalking might centre marginalised voices through diverting attention away from sonic mastery, and towards voice, music and inaudibility.”²¹³ Ben Shannon has facilitated a number of sound and listening walks with public school students, and argues that including students in the compositional process of soundwalks is the best way to subvert the power structures inherent in soundwalking practices.²¹⁴ While the class at my research site only participated minimally in soundwalks, Ben Shannon’s focus on centering composition and “inaudibility” inspired me to consider the ways in which songwriting with such a young, pre-literate group was an act of validating the curiosities and creative strength of these young students. The emergence of a professional and institutionalized musical culture in the US has meant that songwriting seems like a distant and impossible

²¹⁰ Paquette and McCartney, “Soundwalking,” 136.

²¹¹ Roberts and Lumonya, “Sound and Situated Knowledge,” 63-78.

²¹² David Ben Shannon, “What Could Be Feminist About Sound Studies?: (in)Audibility in Young Children’s Soundwalking,” *Journal of Public Pedagogies: WalkingLab* 4, (2019), 98.

²¹³ Shannon, “What Could Be Feminist About Sound Studies,” 99.

²¹⁴ Shannon, “What Could Be Feminist About Sound Studies,” 102.

activity for an untrained musician, and I wanted to demystify that act for students and teachers, showing how songwriting can be personally uplifting and edifying to anyone, amateur or professional. As my project was embedded in a forest-based environment, I also was inspired by the ways in which Springgay and Truman mobilize trans theories to consider the ways that land-based sound art projects can be used as tools to reshape environments in addition to people, in both material and discursive ways, rather than simply as tools for recording or capturing that environment. They argue that “Trans activates a thinking-in-movement. By conceptualizing walking methodologies as trans, we shift from thinking of movement as transition (from one place to another) or as transgression (that somehow walking is an alternative and thereby empowering methodology), towards trans as transcorporeal, transitive, transspecies, and viral in order to activate the ethical-political indifferenciation of movement.”²¹⁵ These types of contemporary soundwalks and their approach to composing with students inspired my approach to listening, composition, and movement, and also resonate deeply with the idea that young students and teachers can collaboratively use listening practices and songwriting to shape their educational environments, creating educational community and space through sound.

While the act of songwriting is, for adults, typically a stationary endeavor, my experience showed that these pre-kindergarten students are anything but immobile: they move as they sing, write, and think about their compositional ideas, and that movement sparks new creative ideas, inspired by the sensory feelings and affects invoked by the forest classroom, and the encounters with the more-than-human beings there. According

²¹⁵ Springgay and Truman, *Walking Methodologies*, 65.

to Gallagher, sound is both a cause of affect, emotions, feelings, and intensities, and an intensity unto itself.²¹⁶ He writes that “Sonic affects may accumulate layers of significance over time, through repetition and habit, by becoming attached to other affects...”²¹⁷ and then wonders at how these accumulations affect how we experience the world in educational and artistic situations (as composer and listener). During my research, I consistently listened for the nuanced ways in which sound, movement, and creativity sparked or built connections, between humans and other humans, humans and more-than-humans, and especially how the phenomenon and uniqueness of sound is a sort of catalyst for building connections between our movements, experiences, intensities, feelings, thoughts, and sensory inputs. As a critical building block of creativity in sound studies, soundwalks as qualitative sound method provided an expansive way of thinking about how elements of theory, place-based interactions, and composition could be combined into a sonic educational research project.

Research Context and Design

The population for this study was a place-based public pre-kindergarten classroom in Vermont, including the students, educators, community musicians, and more-than-human actors. Though it is a public school, over the last decade this school has made place-based education central to its instruction with Forest Fridays (where students do a long, focused outdoor activity) and other unique outdoor learning activities for students. Each class has both an indoor and outdoor classroom, and each outdoor classroom consists of an outdoor covered pavilion and/or other features that students,

²¹⁶ Gallagher, “Sound as Affect,” 43.

²¹⁷ Gallagher, “Sound as Affect,” 44.

educators, and parent volunteers have constructed over the years. Though the whole school is committed to place-based learning, the pre-kindergarten class typically spends more time outside than the older grades, up to four hours per day depending on the weather and season. Even during inclement weather days (extreme cold, snow, rain, wind) students spend up to an hour outdoors, which includes a covered pavilion, rope swings, a mud kitchen, cubbies for student belongings, and a firepit. It is often the case that when the rest of the school calls off recess because it is too cold or icy on the playground, the pre-kindergarten students continue to tromp around their outdoor classroom in bright colored snow suits and heavy boots. The pre-kindergarten classroom is focused on play-based learning, and open play and teacher-guided play are central to students' explorations of the forest classroom environment. This play-based approach to learning is inspired by the lead teacher's study of the Reggio Emilia approach to early childhood educational design, which emphasizes critical thinking, open-ended inquiry, and arts-based creative projects to create "meaningful and emotional relation to the subject matter."²¹⁸ This creative work is meant to give students a myriad of tools to "make their own thinking visible," and to learn to manage their emotional interactions and executive functioning skills within the classroom community.²¹⁹ Practitioners of Reggio Emilia reject outcomes-based educational models which they feel focus on numeracy and literacy too early in a child's life. The pre-kindergarten program is, in some ways, set apart from the school in terms of its pedagogy and administration, as pre-

²¹⁸ Carolyn Edwards, Lella Gandini, and George Forman, "Introduction: Background and Starting Points," in *The Hundred Languages of Children: The Reggio Emilia Experience in Transformation, Third Edition*, ed. Carolyn Edwards, Lella Gandini, and George Forman (Praeger, 2012), 7.

²¹⁹ Edwards, Gandini, and Forman, "Introduction," 7.

kindergarten programs are accredited and overseen by the Department of Children and Families in Vermont, while the rest of the school remains under Vermont's Agency of Education. But it is also viewed by administrators and teachers as an important place for new students to learn the values of the school as they develop the social, behavioral, and emotional regulation skills needed for learning in the upper grades. However noble the intentions, the pre-kindergarten teachers told me that some students experience this as a bait and switch when they struggle to adjust to increasing amounts of indoor classroom time in kindergarten and beyond.

In the literature review and theoretical framework of this dissertation, I showed how sound in educational settings is often linked to unexamined normative values of race, gender, class, colonialism, white supremacy, and most importantly for this dissertation, sense of place. The ten young students and three teachers in this rural setting were all, to the best of my knowledge, white, cis-gender, and middle-class, though no surveys were conducted, so this assumption is based on casual conversations with parents and observations of families. Yet this context stands out from much of the literature on sound studies in education for the ways in which it is a deeply rural community. During one lesson in early May, Lee, the lead teacher, asked the students to share in pairs what they were growing in their home gardens. Without skipping a beat, the students launched into the list of peas, greens, pumpkins, rhubarb, green beans, squash, tomatoes, cucumbers, and more that they were growing in their own plots, with their parents, and with grandparents (this school also has a part-time farmer/gardener on staff that students work with on agricultural projects). This was a group of four- and five-year-olds that was, compared to many of their counterparts in suburban and urban US settings, already

deeply in tune with the seasons, the critters and materials of gardens, forests, fields, and their community at large. This context therefore allows for a rural-focused contribution to a growing canon of sound-based work in urban and suburban educational settings.

December 2024 through February 2025 was cold and snowy in Vermont, especially when compared to recent winters with their unpredictable and frequent warming trends. Temperatures stayed well below freezing for much of January and February, but March warmed suddenly and intensely, leading to a very short maple sugaring season.²²⁰ By recommendation of the teachers, I started phase 1 of my fieldwork in mid-March with the first signs of spring to get familiar with the students, teaching style, class routines, and educational spaces before the songwriting unit started in earnest at the end of April. The closing

days of March were the start of spring in the ways many of Vermonters define it: snow melt, a slow increase in birdsong, warming temperatures, passing rain and wind, monstrous puddles, and a

Sample Daily Schedule in Spring
8:00 – Arrival, drop-off, and indoor play
9:30 – Circle time (educational instruction)
9:45 – Snack time
10:15 – Transition outside to playground
10:30 – Free play (in Wildwood Forest)
11:45 – Storytime (teachers read a book)
12:00 – Lunchtime
1:00 – Rest time
2:00 – Free play on playground
2:50 – Dismissal

seemingly endless supply of gooey mud. It was a sensory heaven for the typical pre-kindergarten student. The pre-kindergarten schedule is highly routinized like most public-school experiences, but it differs in some important ways. This pre-kindergarten class

²²⁰ Maple saps runs best when nighttime temperatures are below freezing and daytime temperatures are sunny above freezing, but not too warm, typically in the low 40's. Typically this type of weather will last for two to three weeks in March and April, but human-induced climate change has reduced the consistent temperatures needed for maple sugaring. For Vermonters attuned to it, the timing of sugaring season is a powerful indicator of the impacts of human-caused climate change.

does not have pre-determined subject blocks like science, reading, or math, set to rigid schedules. It is built instead around blocks of free playtime, two structured gathering times (circle time and story time), mealtimes, and an hour-long rest time after lunch (see above). Though the sequence of activities stays nearly the same from day-to-day, the exact timing varies according to a wide variety of factors like the weather, occasional special blocks (like music), and the general flow of the day, often determined by students' and teachers' moods and behaviors. Each time slot carried its own set of sonic expectations, and likewise it was often sonic cues, like leitmotifs, educational song games, songs, and possibilities and ranges for imaginative play that delineated different sections of the day and characterized specific moments.

The songwriting unit began after a week-long April break and proceeded throughout much of the month of May. Somewhat casually throughout May, students, who were mostly pre-literate at the time, dictated song lyrics and ideas to me and the teachers, and we kept a handmade lyric book for each student, encouraging students to write about topics of interest to them, providing creative prompts, and brainstorming rhyming options when on occasion. Once each student had generated a small set of song lyrics, we designated a songwriting week in late May. Two local songwriters and I each spent a morning with the class outside writing songs with the students based on their lyrics. Students often started their work with musicians and educators individually but given that this is a play-based classroom, other students, enchanted by the songs and sounds, joined in to play percussion or sing along. Once a song was complete, the student, adult musician, and lead teacher performed the song together as the teacher made an iPhone recording to share with families and to help the class learn the songs in the

coming weeks. Throughout the final weeks of the school year, the class collectively learned and performed these songs together, incorporating them into daily routines as we planned for one final singing party with families at the end of the year.

Analysis and Interpretation

My initial inspiration for transcription, analysis, and interpretation was inspired by Steve Feld's approach to acoustemology, his term for the study of sound as ontology. He writes "Acoustemology, then, is grounded in the basic assumption that life is shared with others-in-relations, with numerous sources of action (*actant* in Bruno Latour's terminology; 2005) that are variously human, nonhuman, living, nonliving, organic, or technological. This relationality is both a routine condition of dwelling and one that produces consciousness of modes of acoustic attending, of ways of listening for and resounding to presence."²²¹ Feld's PhD dissertation, which became the book *Sound and Sentiment*, served as a model for listening, analyzing, and thinking about how the wholeness of sounds of a place, from those actors making sounds like humans, animals, plants, machines, weather, and more interact with the materiality of the space filtered in/out of our listening bodies to produce in each of us a sense of being in place, of being part of a social and ecological community.²²² Feld, again: "Acoustemological approaches, while equally concerned with place-based space-time dynamics, concentrate on relational listening histories—on methods of listening to histories of listening—always with an ear

²²¹ Steven Feld, "Acoustemology," in *Keywords in Sound*, eds. David Novak and Matt Sakakeeny (Duke University Press: 2015), 15. Reference to Bruno Latour, *Reassembling the Social: An Introduction to Actor-Network Theory* (Oxford University Press, 2005).

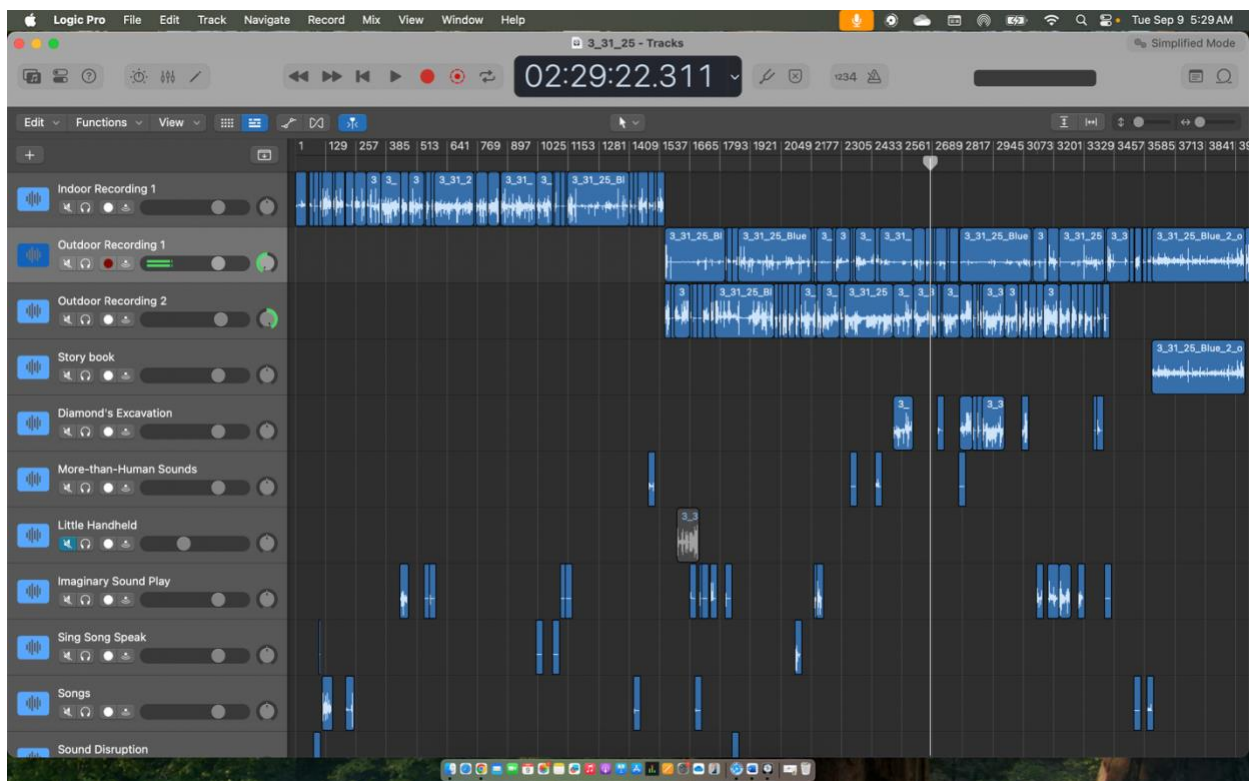
²²² Steven Feld, *Sound and Sentiment: Birds, Weeping, Poetics, and Song in Kaluli Expression* Second Edition (Philadelphia: University of Pennsylvania Press, 1982/1990).

to agency and positionalities.”²²³ My hope was that my approach to sound recording would give me a second (and third, and fourth) chance to re-encounter the sounds of the place, isolated from the other sensory inputs happening in that space and time, so that I might have a sort of iterative process for analyzing both the unique properties of sound as educational epistemology and ontology and the ways in which sound is just one small part of the sensorium. Much like Feld’s dissertation, I found a research site rich in sound, song, voice, and play, with interplay between the social world of humans, and the real and imagined cultures of the animals and plants of the forest classroom. And like Feld, when I dug deep into my recordings, I encountered more sounds than I could ever truly make sense of.

During my fieldwork period, I was gathering sound recordings and notes at too rapid a pace to keep up. Most evenings, I had just enough time to export, name, and organize my sound recordings. I listened back quickly to critical sections for sound quality and clarity to inform another day of recording, and once I found time, I began to put these recordings into Logic Pro, a digital audio workstation (DAW) used by sound engineers to record, mix, and master sound recordings of all kinds. Sound studies is a growing field, and yet I found little in any research project on how researchers approach the meaning-making phase of data analysis. I am, once again, indebted to Walter Gershon for sharing his detailed analytical practices, and my approach is largely modeled on his mentorship. I was careful when utilizing both of my main handheld devices to start them at the same time, which gave me an easy way of ensuring that they could be synced in Logic Pro in the analysis phase. This gave me a stereo recording of the outdoor forest

²²³ Feld, “Acoustemology,” 15.

classroom, and it also allowed me to hear things in playback that I missed in-person because I was constantly moving around the forest (mostly getting dragged into some sort of game, art project, conversation, or music jam). As the days of fieldwork passed, I started to develop a series of codes, all of them sound- or voice-related, that were generated from my literature review and participant observation. My codes were primarily categorical, as I needed a way to summarize the various sonic moments of the day, so that I could go back and more quickly identify and listen to these sonic moments across the time of my fieldwork. These coded sound clips also represented salient examples of the various codes. For example, if there was twenty minutes of imaginary



sound play in the forest playground, after listening several times I would cut what I felt was a cohesive two-minute section of that sound recording.

I created a new track in Logic Pro for each code (see above an abbreviated view), and when that code appeared in the sound recording, I snipped it and dropped it into a track (some sound recordings were dropped into multiple tracks if they met the criteria for multiple codes at once). I used this method of coding during the first phase of my fieldwork (the time prior to the start of the songwriting project), and this method generated a huge bank of sonic data to develop themes and ideas for chapters 4 and 5. The consistency of codes across different days of sound recording also gave me a way to track how prevalent certain types of sound moments were through day-to-day comparisons, as well as by looking at comparisons across different times of the day or week. I listened and listened and listened to my recordings, coding and recoding, scribbling notes by hand and in Word, eventually moving towards ideas, themes, theories, and narratives. Once I generated some themes, I listened for those themes across recordings, challenging myself to confirm that a theme was generalizable, not just some unique moment that had caught my ear and interest on a particular day. I also spoke casually with Lee (the “unstructured interviews” I describe above), the lead teacher of the pre-kindergarten class, about the ideas and themes I was developing, to confirm that I was not lost in my own imagination.

During the second research phase, which occurred during the songwriting unit that is featured in chapter 6, I did not follow a standard coding and analysis process for several reasons. First, in line with research-creation projects, my focus was on being a creative partner to the students, and as such, I could not be as careful and thoughtful with

my sound recordings. As a result, though I have extensive sound recordings from this phase, I primarily focus on the recordings of the songs themselves, as well as the creative processes that led to their composition. Second, I treated this phase as a theory-driven research-creation project, and as the reader will see, much of chapter 6 is speculative and imaginative. While I was open to the possibility of coding this phase prior to the research, once completed I felt that categorizing and coding music and songs would be a disservice to the ineffable qualities of music and sound. As the reader/listener will see and hear, many of these songs have simple lyrics and themes, and yet we listeners know that it is the simplest of songs that sometimes have the most profound meanings which are only evident in the combination of music, lyrics, performance, and context. Instead, I lived with the songs and tried to understand what they meant to me after having spent several months with these children. Regardless of the approach to meaning making, I shared near final versions of all chapters with the lead teacher of the class who read through them to ensure the validity of the findings.

Ethical Considerations

Most research begins with a pressing research question or a problem that the researcher wants to investigate. My journey to this set of research projects was equally inspired by an interest in qualitative sound methodologies, and the ethical and procedural possibilities and challenges associated with sonic research. In previous research projects, it was taken for granted that my sound recordings would be translated into text and quantitative data as an essential process of social research, and these experiences always left me unsettled. Reading Gershon's work was inspirational for the ways in which he captured feelings and ideas that I had been previously unable to name. In terms of ethics,

Gershon's argument is not that sonic work is inherently more ethical or transparent (any media form can be manipulated, more so in a time of rapid AI advancements) but rather that, when ethically approached, the possibilities for transparency in sound are unique.²²⁴ In this way, sonic research can "provide a means for research participants to express themselves in their own voices without showing their faces and provide the ability to hear ecologies without necessarily giving away significant identifying factors."²²⁵ This was the paradigm with which I entered my research, and I envisioned a dissertation rich with sonic hyperlinks to voices, imaginative play, and animal and human songs with weather systems and forest matter as main actors in this drama.

However, this was not to be. According to University of Vermont's Institutional Review Board (IRB), sound is always an identifying factor, and they prohibited me from sharing any of my sound recordings for fear I might reveal the identities of students. Counter to commonly accepted understandings of sound in the field, UVM's IRB considers that sound recordings are always a human likeness, rather than a technologically mediated social construction. And yet, I spent three months with these students, and often I can only name the person behind the voice because I remember the specific situation. I was enchanted by sonic research because of the possibilities for subverting some of the ethical challenges that I had encountered in my own work, but it seems I was naïve in imagining that an IRB would have the knowledge and patience to listen and understand my approach to sound research. Gershon argues that the "sonic expression of information" is often what sets sonic methodologies apart from those

²²⁴ Gershon, *Sound Curriculum*, 149.

²²⁵ Gershon, *Sound Curriculum*, 151.

studies that merely use sound for data collection, and in this frame, UVM IRB's refusal to allow me to even ask parents whether they would allow me to use recordings of their children in this research was a literal act of silencing the participants in the study, since many IRBs can and do allow the sonic to be a part of the final research presentation, and place an emphasis on giving research participants that decision. As a result, the only sound you will hear in this dissertation is a short clip in the introduction and chapter 6. The research completed in the introduction of this dissertation was approved by The School for International Training where I was working at the time, and they allowed parents and students to opt-in or out of allowing me to use their sound recordings in publications, which is the established standard in the field of sound studies. Chapter 6 utilizes recordings posted publicly on a class blog by teachers with parent and school approval. True to my original appeal, I have only used those recordings that do not contain identifiers and have clipped the beginning of some of the recordings which included the students' names.

Regardless of these distinctions in research presentation, the primary co-researchers in this study (along with three teachers) were four- and five-years-old, which proposed an interesting set of ethical circumstances. In line with Gershon's work, I sought to adhere to the same standards for "transparency, power, and ethics"²²⁶ that all ethnographers adhere to. Though their parents signed all the forms as legal guardians, I explained my research and plans to students in basic terms and as explicitly as possible. I moved slowly in gaining their trust, and at moments I abandoned my recordings all

²²⁶ Gershon, *Sound Curriculum*, 134.

together when the priorities of the students outweighed the needs of the research.²²⁷ As a result, they became interested in my sound recording devices, and we had many small conversations about how they work, and what I was using them for. As mentioned, they also had their own device which they could use whenever they liked, and I was anxious to share it with them to hear what they would record. To them, I was just another adult or volunteer teacher, and they quickly became at ease with my presence and the sonic work I was pursuing. From a sound recording perspective, this allowed for a more open-ended and democratic approach to the gathering of data and lent an audibility to moments that would have otherwise been inaudible. Additionally, the songwriting unit was a critical element of the research. Most members of this community know me first and foremost as a musician, and co-writing songs with the class was the main way in which I could give back and contribute to students' growth, learning, and sense of community. Given the decolonial theoretical work I highlighted in chapter 2, I needed to make sure that this project was non-extractive, and the songs we wrote became an audible and (among families) cherished artifact of our time together. It was a mutually beneficial opportunity for all of us baked into the research design itself.

Beyond the practical matters of gathering and analyzing sounds, for me there was also the importance of honoring sound in all its forms, of always seeking to listen deeply as a basic building block of respect for the people and more-than-human critters and sounds at my fieldwork site. The idea of deep listening is an essential one in the field of

²²⁷ One constant example of this was during students' time on the playground each day. Students were learning how to use the swings and always wanted to be pushed, and the teachers never had enough arms and hands. There were no good places for my sound recorder during these moments, and so I have very few good recordings of the playground time because I spent those minutes pushing students on their swings instead.

sound studies, and it became my guide for a daily practice of ethical listening and recording. According to Bull and Back, deep listening “is not straightforward, not self-evident—it is not easy listening. Rather, we have to work toward what might be called agile listening and this involves attuning our ears to listen again to the multiple layers of meaning potentially embedded in the same sound.”²²⁸ Similar to John Cage’s compositional approach, which was about listening for music where others only heard noise, for Bull and Back, sound research is about listening for symbolism, meaning, and information where we previously only heard noise. Deep listening as a research method is not only about the act of listening, but inspired “procedures for investigation, transposition and interpretation” that allowed me to re-think and dwell upon my broader relationships with community, power, and the spaces and places we inhabit.²²⁹ Deep listening is a slow and time-consuming process, and it required patience, listening and re-listening. In this framework, I often sat again and again with sound recordings, trying to be mindful of what I already thought I knew, and willing to follow the sounds to new theoretical places.

My approach to listening differently in this research project was also equally indebted to Pauline Oliveros’ practice of deep listening, a compositional and meditational practice focused on both external and internal listening (by this she means both sounds and the workings of our emotions, ideas, and embodied knowledges). She writes that **“Deep Listening is a form of meditation.** Attention is directed to the interplay of sounds and silences or the sound/silence continuum. Sound is not limited to musical or speaking

²²⁸ Michael Bull and Les Back, “Introduction: Into Sound,” in *The Auditory Culture Reader*, eds. Michael Bull & Les Back (Berg, 2003), 3.

²²⁹ Bull and Back, “Introduction: Into Sound,” 4.

sounds, but is inclusive of all perceptible vibrations (sonic formations). The relationship of all perceptible sounds is important. The practice is intended to **expand consciousness** to the whole space/time continuum of sound/silences. Deep Listening is a process that extends the listener to this continuum as well as to focus instantaneously on a single sound (engagement to targeted detail) or sequences of sound/silence.”²³⁰ Deep listening was therefore a connective thread between my listening to students and the classroom sounds in the moment, and listening to my recordings to ensure that I represented the wholeness of the sonic experience of the classroom. Oliveros’s ideas also informed my thinking about the ways in which listening is a multisensory experience, an idea that I explore in a section on perspective-taking and listening differently in chapter 5.

Conclusion

A wide array of sonic methods, methodologies, along with their ethical implications, inspired the sonic research for this dissertation. What follows is three distinct but interrelated chapters. The first is a sonic geographic account of the classroom, describing the ways in which sound contributes to and creates educational space and place. In chapter 5, I describe a student-led imaginative project that occurred from late March to early May concerning the excavation of a large rock, and several other activities in the classroom that raised questions about decolonial pedagogy, perspective-taking, and listening differently. And in the last chapter, I focus on the songwriting project as a sort of culminating sonic moment for the classroom. In chapter 4, which focuses on sonic geography, I am positioned as more listener than participant, and this work is inspired by

²³⁰ Pauline Oliveros, *Deep Listening: A Composers’ Sound Practice*, (New York: Deep Listening Publications, 2005), 15. Bold type is in original text.

much of the recent sound studies in education literature that I have outlined throughout this dissertation. Chapter 5 speaks most clearly to the decolonial thematic framework developed in the earlier pages of this work and is a contribution to much of the work on decolonial pedagogy in early childhood place-based and nature-based educational research. Lastly, chapter 6 exists in the research-creation space I describe above, blurring the lines between researcher and participant, and between art and research. I approached the writing of each chapter differently, inspired by the epistemological and methodological foundations and style of the literature that inspired them, but there is also thematic thread that ties them together. They are also in chronological order. As a musician, I think of them as songs in an album as much as chapters in a dissertation.

CHAPTER 4 ∞ SONIC GEOGRAPHY OF A PLACE-BASED CLASSROOM

In this chapter I show the ways in which sound is a defining feature in the construction of educational space and time for one pre-kindergarten class. Uniquely, this class has both an indoor and outdoor classroom with ritualized and routine movements and rhythms between spaces each day. While sound is not the only phenomenon that defines educational space, in this chapter I center acoustic resonances to show how this ecology of sounds hovers, contains, and binds educational practices across a myriad of adjacent locations within the school grounds. When students move between their indoor and outdoor spaces, the sights, smells, and physical spaces shift quite dramatically, and teachers in this class mobilize sound and practices of listening, including songs, song-games, and speech; and expected values around movement and affect to create a consistent educational experience (and behavioral expectations) for their students across time and space. In this chapter, I show the ways in which sound defines what it means to be in class and in school, and marks the schedule and rhythm of the days, weeks, and seasons, which I argue is both productive of *and* resistant to what Emily Thompson calls “modern sound,” the idea that contemporary sound is a product for capitalist efficiency that can be used to manipulate time and space.²³¹ In this classroom, sound and the sensory and experiential explorations it provokes is produced simultaneously by the friction between play-based learning pedagogies, the teachers and students aspirations for authentic and unstructured encounters with a forest environment, and the discourses, structure, and confines of the public educational institution. Farquhar argues that

²³¹ Emily Thompson, “Sound, Modernity and History,” in *The Sound Studies Reader*, ed. Jonathan Sterne (Routledge, 2012), 119.

“children live in the present in a different way to adults”²³² and notes teachers direct time in early childhood education settings mostly in line with linear, progress-oriented constructions of time.²³³ By centering sound as rhythm, this example shows how paying attention to educational sound design can disrupt and stretch “linear time”²³⁴ as a basic condition for foregrounding a wide range of other non-normative educational practices. This chapter is therefore about how sound, sonic expectations, and songs create space, measure time, and choreograph behavioral movement across a school day and year in one pre-kindergarten classroom.

Following this brief introduction, the chapter is divided up into two halves. In the first half, I bring the reader through a typical day by describing three episodes which contribute to the sonic ecology of educational space. The first episode is an example of how ambient emergent and unexpected sounds (in this case, a tuba played by the school’s music teacher) inspire imaginative play and creative storying. In the second episode, I describe the class’s circle time activity to show how teachers use sound to structure space, time, and learning. In the third and longest episode, I relay the sounds of play in the forest classroom to show how the sound of place-based education is produced by the rich interrelations between humans, pedagogy, weather, the forest, and more-than-human actors.

²³² Sandy Farquhar, “Time in Early Childhood: Creative Possibilities with Different Conceptions of Time,” *Contemporary Issues in Early Childhood* 17, no. 4 (2016): 411.

<https://doi.org/10.1177/1463949116677925>.

²³³ Farquhar, “Time in Early Childhood,” 409-410.

²³⁴ Farquhar, “Time in Early Childhood,” 409.

The second half of this chapter is devoted to analysis and discussion of these moments and episodes. I mobilize Matless's "sonic dialect,"²³⁵ the idea that places each have a certain sonic voice that is a product of nature-culture interactions and interrelations. I start this section by breaking down the ecology of sounds of the classroom, detailing the sonic actors and the various compositional (structured), and improvisational (emergent) sounds that contribute to the components of ambient sound in the classroom, including songs, educational song-games, stories, speech, movement, imaginative play, and more. I then discuss what I hear as the three main themes or defining actants of the class's sonic dialect: (1) the efficiency of sound for classroom management and educational praxis, (2) sound as community and touch, and (3) the ways in which the seasons, weather, and forest classroom are sonic collaborators in the performance of educational sound.

Sonic Episodes

Emergent Sound: The Tuba Monster

The sonic classroom is porous and sounds and feelings are constantly emerging into educational sonic space to morph and grow into performances of imaginary play. There are hundreds of moments in each day where sound animates imaginary play and play in turn animates sound making. Early one April morning, a few young fathers (their deep voices providing surprising bass notes amidst the children's chatter) had lingered in the classroom at drop-off, discussing photographs students and teachers had taken with a new high-powered microscope that was donated to the class as part of a science-

²³⁵ Matless, "Sonic Geography," 750.

challenge. It was a rainy, raw spring morning, the perfect day to raise spirits with a school-wide Bring-Your-Belongings-in-Anything-but-a-Backpack-Day, and as students filtered in there were shrieks, laughs, and discussions about the various containers (like rolling suitcases and coolers) that students brought. As the parents filter out and the hallway noise dampens, the teachers take lunch orders while the students continue their typical morning routines of washing their hands (the sound of the faucet running and students messing around at the sink is a constant refrain throughout the day, and I wonder if those sink sounds subconsciously signal to the students that much-needed nourishment is imminent). During the first morning block, teachers often put out games, puzzles, and other interactive bits and toys for students to explore in small groups with each other, or occasionally with one of the teachers, and the sounds of dice rolling, blocks knocking, and little conversations compose the early morning hour of the class. Quite suddenly the sound of a tuba playing “Row, Row, Row Your Boat” creeps through the walls, ominous but playful, performed by the music teacher in his classroom next door.²³⁶ It is unclear whether the music teacher is just warming up for the day or sending a little sonic message to the pre-kindergarten students, who love his goofy demeanor and fun classes because they involve dancing, games, singing, and banging on instruments. Regardless, it is a moment begging for sonic play and Rockin’ Hawk²³⁷ immediately pretends that the tuba

²³⁶ The pre-kindergarten class is, strategically, located next to the music room, which is at the end of a hall near the gym. Loud activities go together. This pre-kindergarten location also provides quick and easy access to an outside playground, which is a sort of third space between the indoor and outdoor classrooms. Students who get their outdoor clothes on quickly are allowed out on the playground while the class waits for the other students to suit up. Dressing four- and five-year-olds for outdoor play is no simple task.

²³⁷ Students were asked to pick pseudonyms for this study, which they did with great joy and foolishness. A few weeks after my fieldwork ended, I ran into a student and her mother and reminded her of the name she had chosen. She stared blankly into space for a moment. She had no recollection of the name she picked, nor could she offer a reason why she chose that name.

is a monster that will eat one of her classmates, Ramden, who is innocently putting his indoor shoes on nearby. “The tuba will eat your whole entire body Ramden!”

“Ahhhhhhh!” shrieks Ramden in playful delight.

“That tuba will bloooow your head off,” states Jewel, calmly and matter-of-factly.

“Aiiiiiii!” Ramden yells again. Ramden, more than any other student in the classroom, makes and creates sound to animate his play. He is obsessed with orca whales and playing chase games during free play in the forest. But whether he is imitating whale sounds or police cars; singing an endless, wordless, rendition of Jingle Bells; or pretending to get his skin vacuumed off by a Tuba Monster, his vocalizations sound pretty much the same. Ramden’s loud shrieks make up an outsized portion of the soundscape during free-play periods (in the morning, in the forest, and outside on the playground at the end of the day). Like a few of the other students, he has a deep reserve of energy for running and being physical, and his shrieking and vocalizing seemingly contributes to filling his bodily need for rough play, both through the vibration that is produced in the body when yelling, and for the ways in which this soundtrack makes play feel more real and exciting to him. It helps get his playmates riled up, too.

Diamond, another student, joins in the Tuba Monster game and the volume in the room skyrockets with cartoony horror flick narration before Lee, the lead teacher, steps in. “Ramden, is this a game that you’re liking? Because if you don’t, you can say ‘Can you stop please?’” Ramden says nothing. He seems unsure of whether he likes the game or not, and I sense that he liked the attention, if not the idea of getting turned inside out by a Tuba Monster. A moment of quiet follows and then the game is clearly over. Everyone moves on.

This morning block before direct instruction allows students to focus on any interests or projects they may have, in small groups or alone. The teachers (three total most days) float in between student groups, mediating only at certain times, typically to help students work out a conflict (such as in the case of the Tuba Monster), or to capture a teachable moment. And yet Lee seems engaged in a tightrope walk, balancing her own pedagogical philosophy against the educational demands of the institution. Regardless of what happens here in this play-based space, each of these students will be drilled on math and reading throughout much of their primary school years. While Lee has constructed an educational space rich with music and experiential play, the normative mechanisms of time and development that schools dictate in the US can only be held at bay so long. Each morning Lee puts a “Question of the Day” up on the board, often to build some little math, literacy, or executive functioning skills, and students try to answer it on their own time and in their own terms (often with the help of a teacher, since only a few of them can read). Today the question is “Find something in the room that starts with the letter B”. These little prompts are part of a series of tools, games, activities, and direct instructional lessons that work to build the basic numeracy and literacy skills needed, but they fit quite well in the play-based, Reggio Emilia educational setting that Lee has designed. This activity also forms a miniature experiential cycle, as students are asked to think, answer, and explore the question, and then discuss and reflect on it at the start of circle time.

Structured Sound: Circle Time

During one late March day, the Question of the Day is a bit more in line with the Reggio Emilia approach. The teacher has posted a picture of a young child with a

troubled expression on their face, accompanied by the question “How is this person feeling?” Students are asked to “vote” by placing a round magnet on either the left side or the right side of the easel with the question, depending on whether they feel the child is displaying an angry or sad expression. To call the students in to circle time, the teacher uses one of her three leitmotifs, short melodic call-and-response phrases that direct the students to stop what they are doing and pay attention or come to her. She uses her typical indoor leitmotif this time, calling “Hey pre-K” (“hey” and “pre” are a minor third above the k), and the students answer in rhythm and in key (“Hey, Lee!”). It takes a while, but eventually they all situate themselves in a circle. Circle time is the most organized time of the day, a performance of education tuned to short attention spans and these young learners’ need for participatory, experiential education to keep them engaged. Each day one student is selected as a circle helper (today it is Rockin’ Hawk) and they get to choose one of the three opening songs that the class will sing, “Hello, Bonjour, Buenos Dias,” “Good Morning Dear Earth,” or the song mentioned in the last chapter that I wrote for them, which they call “We’re Touching Our Toes.” The opening song, like every passage in this performance, is short and swift. As a start to circle time, it quickly and joyfully composes the students into a more focused community out of the improvisatory and rambling play-based moments of the morning. After the opening song, the teacher notices Allen Soy Sauce having a tough time settling down, and she asks him to look around at the others and let the teachers know when everyone is ready and paying attention.

From there, Lee turns to her easel and the question at hand. She speaks in a more sing-song voice than any other part of the day, with larger melodic jumps and more vocal

dynamics, and says “How is this person feeling? Let’s make this face, ready?” It feels like a performance of education, in stark contrast to the snack time following circle time, in which Lee resumes using a normal tone of voice. Though circle time has only lasted a few minutes, Ramden is already audibly simmering in a corner. Stuck to his spot, his body’s need for movement seems to be buzzing up and out of his mouth in little grunts and squeaks. Lee asks the students to imitate the expression on the student’s face in the picture to understand the specific emotion on display. Miss Alyssa, a teacher who splits her time between this pre-kindergarten class and a few others, usually sits next to Ramden at circle time. Ramden is working hard to keep his cool, but even Miss Alyssa’s typically calm support is not helping. His practice angry face, unlike the others, includes a nasty hum, nearly a yell. He is feeling this emotion, not pretending like the others. Lee asks everyone to take a few breaths and wash away these sad and angry expressions, then they count the “angry” votes together, up to five, and the teacher draws the number five while simultaneously saying a little rhyme that narrates how to write a five: “Down the side and around like that / Come back up and give it a hat!” There is a rhyme for every number (i.e. “Make a line, then you’re done / Now you have a number one”), and by the end of the year many of the students can remember them all, these easy reminders of how to write and recognize their numbers. The teacher discusses the morning’s activity, in which students sorted pictures of children making different expressions into green (positive), yellow (mixed), or red (negative) feelings. It is a seed of curiosity that the teachers will focus on in the coming months, helping students to recognize their own and others’ emotions. This lesson lasts only a moment (literally less than three minutes), and Lee, sensing a rising mania from all the students, quickly stops the lesson and brings

everyone to their feet (students, teachers, and me) for a song-game called “Little Tommy Tucker’s Dog” where we sing together in pairs, clap our hands, and then turn around so that we slowly dance our way through different partners and around the circle. By the end we are all laughing.

Next, the students are back down at their spots, talking through some of the class rules such as “We use gentle touches.” After a few more discussion points, we are back to another song. Because it is early spring, Rockin’ Hawk and the teacher pick a song about baby birds in a tree who are learning to fly but end up falling to the ground instead. The song ends with a big PLOP and a little laugh, and Rockin’ Hawk says, “I hope they’re all right!” Though the songs, prompts, discussions, and games played during each circle time differ, this format remains nearly the same, a rotation of sound and movement pieces which Lee can pull at in improvisatory ways to help keep children focused and engaged while also building community and developing these basic academic skills. (Lee has a small plastic box filled with over fifty index cards of different songs she can pull from at any moment during circle time to re-direct focus and keep the sonic experience fresh and exciting). Lee has arrived at this song- and game-based approach through years of experience, and for her it is a way of choreographing education through sound and movement that feels like a win-win-win for everyone, the students, the teachers, the institution. She has designed a rich sonic world, but a deeply participatory one that immediately reminds me of Walter Benjamin’s concept of aura. While most of these songs were written in different places and different times (“Little Tommy Tucker’s Dog” is likely inspired by an English nursery rhyme from the 1700s) they all have some element of action, movement, or improvisation involved, which allows the students and

teachers to put their own spin on them, to bring the emotions of the day to animate the song, or to reference phenomena that may be happening in the natural world around them, or the social worlds of their families and classroom. Though circle time is Lee's most sonically and educationally composed moment of the day, group improvisation is built into the songs and games, and these situate the sonic building blocks here in this place or time. Lee constantly tells me that these students have a worldview that is much smaller than us adults, and they will hardly stand for anything else. Though the teachers have learned this long ago, early in the research phase I stored this nugget of information away for when the songwriting unit started later in the spring.

Snack time usually follows circle time. Students need to wash their hands before eating but there is just one tiny sink and ten animated, hungry students, so the teachers initiate one of many song- or rhyme-games they play to release students from the circle one or two at a time. Today it is a game called Iggity Ziggity, where the teacher says "Iggity ziggity, how many?" She quickly flashes a card with dots in a grid on it, and the students tell her how many dots were on the card using their fingers only (no words). It is a fun and intentionally quiet game which builds number recognition while keeping the volume low and the movement to snack time mellow. In this case, the game encourages quiet, but the effect is the same: teacher-directed educational sound design for learning and building community harmony. With that, the main direct instruction block of the day is done.

Environmental Sound: Wildwood Forest

This class has a rich forest classroom space named Wildwood Forest which was a primary inspiration for choosing this class as a research site. The class is out every

morning for at least an hour, more so in nicer weather, and some days they extend their outdoor time by taking snack and lunch under their outdoor pavilion which is a central structure in the forest classroom. Moving a group of ten children between the indoor and outdoor spaces is no easy feat and is a choreographed and routinized passage from indoor classroom to traditional playground to outdoor forest, a theatre of parade, sound, and song. Suiting up for the outdoors takes time, and students are encouraged to do as much of this work on their own without assistance from teachers. When a handful are ready, they move outside to a playground out the back door of the class, supervised by a teacher. This transition, from the confines of a dense concrete-walled classroom with a constantly running heating-air conditioning unit to an open airy courtyard, is a sonic breath of fresh air. No matter the weather, it feels expansive, and students always split into two groups, some darting for a set of four swings where they beg for a push from me or a teacher and pump their legs as they pretend to use their swings to fly off to places like France, New York City, and Northampton, Massachusetts. Another group usually gathers around a metal climbing structure where they crawl around and occasionally ogle the small spiders that also congregate there, giving performances of fear about spiders, though over the months of my fieldwork, I notice they are not actually scared, just pretending to be scared. Once the last student is out, one of the teachers howls like a coyote (another leitmotif) and the students drop what they are doing and run to the teacher, ready to make the trip around the school and to the forest, passing through the driveway of the school and a large grassy island that has fruit trees and raised beds for growing vegetables with the school's farmer. The students are not allowed to run on the pavement, but once they hit this grassy island they are free to bolt, and this passage from a chattering walk on the

pavement to a freewheeling spin through the soft, damp, grass, always feels to me like the passage between rooms of sound, dictated by the social rules of the school, the relative safety of each human-designed space, and the flora (or lack thereof) that defines that room.

During this passage one day in late March, the assistant teacher Kristin is leading the group, and in these outdoor settings she is constantly noticing forest happenings that she points out to students, little moments of open-ended wonder. On this early spring day, the students stop at a tree just outside the forest playground that has been planted in honor of a deceased long-serving teacher at the school. The students have a routine of stopping here before crossing the last patch of school driveway, and at the inside edge of the forest classroom where the teachers have taped their names to some leaf buds on a variety of small trees to pay attention to the buds on the tree. Today they notice the first signs of spring growth and start yelling “They’re growing!” But Kristin asks them all to stop and be quiet.

“Close your eyes and also close your lips and just give a listen for a moment.” The students settle down and the sound of a robin and a far-off crow emerges into earshot.

A few students shout in unison, “Birds!”

“I heard a bird!” says another. The listening lasts only a few seconds but these moments of noticing the tree buds growing and listening to the birds singing are constant and subtle reminders to the students: you are not the only beings out here. The students rush into the forest and are anxious to play. Moments after entering, Ramden and Airy are stampeding, huffing, and puffing, but Lee calls them back to the central area with her

coyote howl. The students are confused because usually the coyote howl signals movement on to another major portion of the day or passage into or out of free-play forest time. Is it circle time already? But no, it is Monday and over the weekend the snow has melted, so suddenly there are glorious sticks everywhere that demand to be played with. The teachers have called students in to go through the ground rules for stick play. It is the usual litany of rules: no running with sticks and no touching friends with sticks. It ends on a slightly encouraging note, though, as Lee announces that, “You can battle imaginary things, but not other people because it’s too scary.” The students seem ok with this and off they go into a drizzly, windy, spring day, rain prickling off the leaves and their bright rain suits, and that classic Vermont spring wind, which is prominent in the recordings because I left one microphone up in the woods without a wind screen. As the spring months pass, this forest classroom will feel more like an enclosed room as the foliage grows out, but today in late March it has a feeling of openness. Large delivery trucks from a nearby road throw their engine sounds into the class, occasionally an airplane flies over, and the yells and screams from the upper elementary recess sessions occasionally waft in. Those faraway crow sounds, robin chirps, and chickadee calls from inside the forest continue, harbingers of warmer weather.²³⁸ Throughout the morning, one student, remembering an earlier discussion we had about barred owls and, perhaps, wanting to be a part of the chorus of birds, sings back with the classic barred owl call (“Who cooks for you?”). But mostly the forest is filled with the sounds of play and

²³⁸ I am indebted to the Merlin Bird ID app from Cornell Lab which is a great help in learning and confirming bird sounds.

movement, and teachers being coaxed into play or slipping into situations during teachable moments.

Allen Soy Sauce has recently become enchanted by tasers, and he collects small sticks and hands them out to fellow students and to me. “Diamond, I found a taser, for your JOY OF DESTINY,” he yells. Rockin’ Hawk and Pat Etta are cruising around the forest collecting small things, noting the leftovers of rodent meals. Rainbow is also meandering around the forest, but she is adrift in her own imagination, operatically singing nonsense words and sounds. Summer, a gentle student who is shy to the point of being nearly nonverbal, is off in the mud kitchen, playing alone with the clang of pots and pans and the swishing and pouring of water to keep him company, sounds that animate his wordless play in much the same way that vocalizations animate the other students’ play. As the months pass during my fieldwork, Summer will become the most interested in my sound recordings. When I explain that my goal is to capture the sounds of students playing, he shows me trees to hang the sound recorders each day, and he is often intuitive. Though the students have a few different spots where they gather, play, and pass through, they seem to shift day to day, but he must have a sense of the attractions of the forest space across the change of the seasons that bring students to the various locations each day. It is clear to me that while he is certainly the least talkative in the class, he is one of the best listeners. He also enjoys holding one of my sound recorders on occasional class forays around the school and I am quite surprised (though I should not be) to hear his quiet conversations with his friends in the sound recordings during playback. Though he often plays with the other boys, he is shy around adults, especially ones he does not know, and it takes weeks for him to speak to me at all.

Today, like nearly every day, Ramden and Airy are leading a game that requires them to chase each other back and forth through the forest classroom. The sound of their running, yelling, and crashing is a near constant across all my sound recordings. Like most days, Ramden is pushing a plastic wheelbarrow that Rockin' Hawk named "The Rambulance" early in the year (at least that is what the teachers thought she called it, and the name stuck), and Airy occasionally pushes another wooden wheelbarrow. Today the game is "Intruders," but it seems to make no difference sonically. They chase each other, pushing their wheelbarrows which rumble and bump across the roots of the forest, giving them the feeling of speed, recklessness, and adventure as Ramden vocalizes the sound of a high-speed car chase. Other students join in by choice now and again, and Allen Soy Sauce tries to insert tasers into the game. Today Ramden and Airy are in their own imaginary world. Allen Soy Sauce pretends that one of his sticks is a digging taser that can be used to find insects in the dirt, and Kristin, sensing an opening to direct the imaginary back to a reality that Allen Soy Sauce will get excited about, says "You know where insects like to be? Under stumps." Kristin is always listening and looking for these teachable nature-based moments, and it is quite indicative of these teachers' pedagogical approach. Play-based education allows students the freedom to explore the space, and much of that is unstructured (within the limits of the school). Lee is interested in how students develop proprioceptive skills, and based on interactions with various movement experts over the years, believes this type of physical play in the inconsistent, rocky, root-filled, world of the forest classroom is a great way to develop that sense of a student's body in space. And yet much of the time, these students (not unlike us adults) are, sensorially, deep within their own internal imaginary worlds. Left to their own play-based

world, they would likely miss out on much of the arts of noticing that can happen in this forest space, and this is where the teachers step in to relationally bridge the internal imaginary world with the forest. The senses, not just listening but looking, feeling, and smelling, provide this touchpoint between student and forest, but it is not innate, and must be developed, as students learn to stop, listen, look, and think about their bodies in relation to the space of the forest and their fellow classroom community.

After several hours of play, Lee howls like a coyote, and the students all gather for story time. Soon they realize that Rainbow is still off in the forest somewhere, and the students all imitate Lee's coyote leitmotif and start howling until Rainbow arrives. Next, Lee explains that they will be visiting their sit spots today. The class is still searching for small objects and critters to look at under their new microscope, and before they go off to their sit spots for just a few minutes, Lee shows them some baskets they can put living critters and non-living matter into for inspection when they return to the indoor classroom (there is a rule that living critters can only be kept in the classroom for one day and then must be returned to their home). The students are mostly quiet at their spots, and some of them seem to be taking a mental and physical break, staring off into space or deep inside some thought. It is hard to imagine this as a relational moment with the forest, but the teachers are under no illusion here: the point is more to begin to develop the skills of patience, listening, and observation, than to practice those skills. The students are noisy and excited when they come back together after the gathering of these small items for inspection. Lee quickly leads them into a song about bees and flowers in springtime which helps them regain focus before she launches immediately into story time. Today she reads "Raccoon's Last Race," a telling of a traditional Abenaki story by Joseph and

James Bruchac.²³⁹ The story depicts raccoon as a historically speedy, long-legged creature who, through his selfishness and arrogance, loses his long legs and his speed, becoming condemned to live out his existence as the short-legged creature we know today. Another song-game follows (“Little Squirrel Nutkin”²⁴⁰) to release students from the circle as they gather in a line at the edge of the forest, ready to walk back to the school for lunch.

Analysis: The Sonic Dialect of Wildwood Forest

When most of us think of a classroom, we turn immediately to ocular frames, and in the mind’s eye, we see four walls, desks, chairs, art on the walls, books, and a whiteboard or blackboard which serves as a visual focal point. And yet Gershon points out that “sounds similarly serve as markers between spaces, delineating one space or idea from another.”²⁴¹ This classroom is unique in that it occupies multiple spaces indoors, outdoors on a typical playground, and in a forest-based classroom setting. While these settings are visually, haptically, and olfactorily distinct, they are bound by a certain set of acoustic and sonic expectations, designed by the teachers and eagerly collaborated upon by the students: songs, call-and-response verbal charms, leitmotifs, movements, ways of

²³⁹ Joseph Bruchac and James Bruchac, *Raccoon’s Last Race* (Dial Books for Young Readers, 2004). Odanak First Nation, an Indigenous group native to Vermont that now has its cultural center in present-day Quebec, has raised questions about the Bruchacs’ genealogical lineage, and they are encouraging educators to discontinue the Bruchacs’ books in educational settings, which Lee became aware of after this fieldwork period. Lee and other educators in Vermont are grappling with how to properly manage and interpret these complex discussions while also integrating Indigenous stories and knowledge into the classroom. This topic begs for more research

²⁴⁰ In this game, Lee holds a small object in one hand which she shows to the students. Closing her hands into fists, she moves them up and down in rhythm, bumping them together as she sings “Little Squirrel Nutkin in her house of brown / Is she hiding in her house, up or down?” The students then guess whether the object is in the top or bottom hand. They play this game often and after closing her hand on the object she never switches hands. The students would only need to remember whether it is in her right or left, but only a few have figured out the trick after seven months.

²⁴¹ Gershon, *Sound Curriculum*, 15.

speaking, and ways of listening/hearing. In the final pages of this chapter, I want to define these building blocks of sonic space and how they came to be, then discuss the various material-discursive threads that compose this educational sonic space and time into being. The idea of sound as a critical component of time and space, as a platform for movement, is an established concept. Thoreau wrote about how train sounds connected him to the world beyond his refuge,²⁴² and birds “sing with almost as much precision as a clock” each evening.²⁴³ Corbain argued that the ringing and sound of bells in French villages served both to define community by those within/without ear reach, and to mark time for laborers as far back as the 1500s.²⁴⁴ Within education, as I showed in chapter 1, Gallagher’s analysis of sound in schools showed how voice and sound can be targets and markers of power.²⁴⁵

In a pre-kindergarten class, where most students are pre-literate and unable to tell or understand time, I argue that sound plays an outsized role in the creation of educational time and space where the written word (and the clock) might take prominence for older, literate students. My field recordings also show a typical group of children highly tuned to haptic and visceral experiences. For this demographic, songs, sonic games, and imaginary sound play also fills a gap and builds a bridge between institutional educational discourse and the non-discursive sensory needs of the young learners. Throughout my research, I came to think of this world of educational sound as what Matless calls a “sonic dialect...the ways in which a defined region is held to possess

²⁴² Thoreau, *Walden*, 92-100.

²⁴³ Thoreau, *Walden*, 100.

²⁴⁴ Alain Corbain, “The Auditory Markers of the Village,” in *The Auditory Culture Reader*, ed. Michael Bull and Les Back (Berg, 2003), 117-123.

²⁴⁵ Michael Gallagher, “Sound, Space and Power,” 47-61.

a particular voice, designed or expressed by human or non-human sound.”²⁴⁶ Matless’s idea of the sonic dialect arises from his work at a public outdoor recreation area in the UK, and I find this to be an apt theory for educational space because it is a non-visual metaphor that defines the ways in which multiple actors work relationally to create sound. The idea of dialect is also concrete yet always changing, as one knows a dialect once they have learned to hear it, but a dialect may be expressed in an infinite number of unique ways while still retaining the features that bind it together. In this way, a sonic dialect is a living expression of the people and place itself, in alignment with Escobar’s argument that “place, more an event than a thing, is characterized more by openness than by a unitary self-identity.”²⁴⁷ To think of sound as a sonic dialect of space is also an important act of decentering human mastery within a place-based educational context. There can be no sonic dialect of place without the rich more-than-human beings and matter that exists in the forest and in the built environment of the school grounds, and any human play upon this field of actants is at once inspired by the acoustic properties of the matter, and the human discourses around placemaking that are such an important part of place-based education. As Feld writes in his definition of acoustemology, listening and thinking this way allows us to hear “stories of sounding as heterogeneous contingent relating; stories of sounding as cohabitating; stories where sound figures the ground of difference—radical or otherwise—and what it means to attend and attune.”²⁴⁸

This sonic dialect of the Wildwood Forest class is an ecology of sounds that far exceeds human language, and as a framework it is expansive enough to bind (seemingly)

²⁴⁶ David Matless, “Sonic Geography,” 750.

²⁴⁷ Escobar, “Culture Sits in Places,” 143.

²⁴⁸ Feld, “Acoustemology,” 15.

non-sensical and non-teleological student desires, place-based creative play, and sonic staging grounds of outcome-based learning models into one coherent educational sonic place. The teachers in this class arrived at sound and songs as tools somewhat naturally and organically. For them singing and curating sonic expectations was quite natural, and yet they expressed that consciously curating sound design for education was a foreign concept for most teachers.²⁴⁹ The teachers of Wildwood Forest have designed an educational sound world that creates efficient transitions between different blocks of the day with sometimes wild and often unpredictable kids, and is also a major tool for attracting student attention and order when needed. But sound is also a tool that mobilizes an acknowledgement of students' need for care, compassion, and emotional attention when needed; and seeks to meet the institution's directive to give students the basic building blocks for executive functioning skills, literacy, and numeracy to be successful in school and the great journey of life. It is a sonic dialect that ritualizes place-based relationships by tuning into the seasons and the weather, celebrating the lives of critters in the forest, and wondering at how things came to be and where they are going. This sonic dialect is a product of all the historical, cultural, social, natural, and political factors that define Wildwood Forest's environment.

The sound world of this class is patched together through teacher-designed moments of structured sound making and listening (such as songs, leitmotifs, expectations around speaking and moving, stories, practices of listening), and emergent

²⁴⁹ Lee and I discussed how thoughtfully she designs the physical space of the classroom, down to the roots, stones, and saplings she decides to leave in place that students navigate for physical and proprioceptive development. When I asked her if she would ever approach classroom sound design with as much conscious care, she told me she had never considered it. And yet, this answer was quite at odds with the amount of care she puts in to learning new songs and song games each week, season, and year.

sonic moments, many of them student responses. As a way of understanding how this ecology of sounds is bound together, I find it useful to turn to established musical terms to consider how structured moments of sound are compositional, and emergent moments of sound are improvisational, to consider the impact these types of sound making have on us the human listeners and sound makers. I define composition as pre-conceived sounds organized by rhythm, tone, volume, and timbre. Like the teacher-structured sonic moments I describe here, all compositions evoke emotions, affects, and responses, sometimes those intended by the composer and sometimes unintended. Improvisation, not an antonym but a sister to composition, is the act of composing in the moment. Improvisers respond to explicit and implicit musical, historical, and cultural expectations to create and communicate with and through sound. Composition and improvisation exist along a spectrum of the known and pre-planned to the unexpected and unplanned: all composition requires some interpretation and improvisation, and likewise all improvisation depends on the musician or sound creator's past experiences of sound, music, and previously learned compositions. While the sonic design of the class is led by the teachers, the composition I describe here is a collaborative effort: the students, the weather, and the movement of seasons have a great deal of say in the songs and, by their very nature, demand that the sound world is participatory and co-composed. Improvisatory or emergent moments provide a greater freedom of sonic expression for students, but they do so within established sonic expectations. This mix of composition and improvisation is critical to understanding the sonic dialect of Wildwood Forest: teachers crave and rely on these moments of composition to build rhythms and established expectations for how students should act and be in school. But for both

teachers and students in Wildwood Forest, composition is only a framework to improvise in. Students, with their short attention spans and boundless energy, need the freedom to improvise and play, and teachers also recognize that this improvisational play is where the joy of learning is found.

In this situation, educational sound composition and improvisation exists within a framework of established sonic patterns and daily rhythms, built from songs, educational song games, leitmotifs, creative sonic play, and expectations around sound and listening. These sonic elements are simultaneously both compositional and improvisational, and they are the passages and practices of sound that compose the classroom experience each day. In a place-based educational context, learning environments are always in flux, and created anew each moment by the people in it, the built environment, the more-than-human actors and features (weather, animals, plants, viruses and bacteria, etc.) and their interactions. At the same time, learning spaces are defined as much by the set of political, social, and cultural traditions that come to define education and place. In this way, educational space is a “product of interrelations” of these material-discursive factors and is “always under construction.”²⁵⁰

Discussion

Throughout the months of my fieldwork, perhaps much like the students, I came to anticipate the different sonic rhythms of the day, the movement and expectations across composed and improvised moments, and the ways in which the material factors of each indoor and outdoor space and the sonic actors (teachers, students, weather, critters)

²⁵⁰ Doreen Massey, *For Space* (Sage, 2005/2008), 9.

contributed to the sound of that educational moment. My discussion of sound as space is inspired by a 2013 study by Taguchi and Palmer that focused on the ways in which “the entanglement of architecture, materiality, bodies, discourses and discursive practices” dictated the well-being (or not-so-well-being) of girls in a high school in Sweden.²⁵¹ This analysis builds on their approach through sound and sonic dialect as a binding material, but my focus on understanding the material-discursive factors of sound as space/time as education remains the same. Specifically in my analysis, I want to describe three main elements of this sonic world: (1) outcomes-based learning models and educational standards and how they relate to what Thompson refers to as the efficiency of sound;²⁵² (2) sound as a tool for building community through touch; and (3) the seasons, the natural spaces, and the built environment of the school as co-contributors to sonic placemaking.

The Efficiency of Sound

Our society puts great demands on public school teachers these days. Public education has become a highly politicized endeavor, and families bring these ideologies and expectations to bear on the public-school experience. Vermont’s population has remained flat in recent years, and the state is one of the oldest and most rural in the country. The economies of scale that other districts and states enjoy are increasingly out of reach for Vermont, and local taxes are growing (driven in large part by skyrocketing health insurance costs) as district and state officials look for innovative ways to provide quality education and reduce per pupil spending. Prior to this fieldwork period, the most

²⁵¹ Hillevi Lenz Taguchi and Anna Palmer, “A More ‘Livable’ School? A Diffractive Analysis of the Performative Enactments of Girls’ Ill-/Well-being With(in) School Environments,” *Gender and Education* 25, no. 6 (2013): 671. <https://doi.org/10.1080/09540253.2013.829909>

²⁵² Emily Thompson, “Sound, Modernity and History,” 119.

recent legislative attempt in Vermont was Act 46, which created a larger multi-town school district in this area and many others.²⁵³ One pressure this has put on the Wildwood Forest pre-kindergarten is that families from the town may choose to send their students to one of several public pre-kindergarten programs in the district in addition to pre-existing private pre-kindergarten options. This climate weighs heavily on the administrators and teachers at Wildwood Forest who now worry about class enrollment in ways they never had before, and the pressure to perform, and to please families, has perhaps never been higher.

Amongst this place-based pre-kindergarten classroom, two seemingly opposing demands fall to teachers: they must provide students with the freedoms of childhood that are such a strong expectation of Western cultures and simultaneously prepare them for the adult future that looms in the distance. These expectations go back at least as far as Rousseau, who argued for a scientific approach to the education of children undergirded by a mania that humans are always learning, and that care must be taken to ensure it is the right kind of learning from the very earliest ages. He writes “the education of man begins at birth; before speaking, before understanding, he is already learning. Experience anticipates lessons.”²⁵⁴ Many parents embody this intensity of child-rearing in our modern era (the idea that bad marks in pre-kindergarten could reduce your chances of getting into Harvard), and yet it is set against what Taylor calls “the romantic coupling of nature and childhood,”²⁵⁵ where children are positioned as innocent, natural beings whose

²⁵³ As of this writing, Act 73 was the latest piece of Vermont legislation pushing for school redistricting to reduce taxes.

²⁵⁴ Jean-Jacques Rousseau, *Emile or on Education* (Basic Books, 1762/1979), 62.

²⁵⁵ Taylor, *Reconfiguring the Natures of Childhood*, xx.

basic human right is to be free to connect with the wonder of the natural world before the demands of modernity imposes its will on them as teenagers and adults. Taylor's impulse, rightly so, is that this social construction needs to be queered, but that provides little help for teachers and administrators. The teachers in Wildwood Forest feel as if society wants it both ways, and they want it performed with grace. The pressure on educators has perhaps never been greater.

The teachers' use of sound, song, and educational song-games in this class is a vital tool in threading this narrow lane in between the expectations of various stakeholders. The little rhymes that teach students how to write their numbers can be both fun *and* part of a regime of outcomes-based learning by teaching basic numeracy. The educational song games that teachers use to release students from groups teach them basic number recognition and develop skills for paying attention, but they are also a powerful tool for keeping students focused on teaching and learning, a huge challenge for any teacher of young children. Thompson tracks changes in the American soundscape in the early 1900s, showing how rapid advancements gave scientists control and mastery over acoustic environments in unprecedented ways. This new "modern sound" became a "product" that could be controlled which "embodied the idea of efficiency," and "was perceived to demonstrate man's technical mastery over his physical environment."²⁵⁶ Thompson's work focused largely on developments in theater and music performance, but these hallmarks are present in the designed sound of Wildwood Forest, and I think of them as constituting a sort of modern educational sound. Lee has collected these educational song games, songs, rhymes, and more over a dozen years of teaching,

²⁵⁶ Emily Thompson, "Sound, Modernity, and History," 119.

gleaning new ideas from professional development trainings, YouTube videos, books, music streaming services and more. These sounds are part of a massive industry of instructional tools, some sold, and some streamed through YouTube or Spotify (while those generate streams and ad money). Each represents a tiny compositional building block that she can pull from and improvise around to keep the class in line, to keep students focused on the tasks at hand, to keep unwanted behaviors at bay, for efficiency and mastery over the educational environment. This performance of mastery is a basic expectation on Lee from administrators and families, and perhaps most of all, a burden she places on herself. Though most outsiders (parents, licensing officials, and district administrators) will spend very little time with the class, they pass judgement about the teachers and their efficacy during the few moments they are there. Due to the built environment of the school with its separate classrooms and soundproof doors and the separation of Wildwood Forest's outdoor classroom from the school, other teachers and administrators will not see much of what goes on in pre-kindergarten, but they will hear it, and Lee, Kristin, and Miss Alyssa do their best to keep voices and sounds to acceptable cultural norms. It is my hope that any teacher who reads this dissertation will start to wonder about their own basic preferences and assumptions about educational sound environments. Do you prefer quiet, calm classrooms, and why? Or are you a teacher that enjoys some chaos? These preferences are at once personal, cultural, and deeply influenced by the acoustics of learning spaces, and though they may not realize it, teachers make decisions that influence educational sound in profound ways. Regardless of the approach, I argue that classroom sound design (whether conscious or

subconscious) is a reaction to these current discourses of modern, efficient, educational sound.

Sound and Rhythm as Community and Touch

Sound as efficiency is just one element of Wildwood Forest's sonic dialect. Labelle writes that "The momentary connection found in the arc of sound is equally a special formation whose temporary appearance requires occupation, as a continual project. *This is our place* is also potentially, *This is our community*."²⁵⁷ While songs and sounds in Wildwood Forest are mired in these regimes of efficiency and mastery, they are equally about creating new community amongst teachers, students, and the forest. The properties of sound, as an ephemeral resonance that offers continual sensory relationality while also asking for active participation, gives rise to community and wonder in enchanting ways. Above I detailed the sounds, movements, and interactions in Wildwood Forest over three separate episodes, and I hear in those recordings the ways in which the regular rhythms of the teacher's educational sound design threads students together into a cohesive community of care. Improvisatory sonic moments from students, weather, and critters opens the possibility for new ways of discovering that togetherness. This is how sound creates space: by composing and defining both the limits of our histories and experiences and the ways they connect us to a particular place, and by opening a frame for continually performing those relations in the fleeting here and now. Touch is also one of the richest forms of interspecies encounters, and Hohti and Tammi argue that "Through

²⁵⁷ Labelle, *Acoustic Territories*, xvii.

touch, subject/object relations are blurred, while multiple, partly speculative worlds are evoked.”²⁵⁸

These experiences form a rhythm across the school year. Duffy, Waitt, and Harada argue that sound is “neither ‘conscious’ nor ‘nonconscious’ but both; neither ‘cultural’ nor ‘material’ but both; neither physiological nor psychological but both at once; neither ‘biological’ nor ‘social’ but both simultaneously.”²⁵⁹ For them, this means that it is the rhythm, across all these frames of understanding sound across days, months, and years that causes these young learners to form “body-space relationships” across time.²⁶⁰ The rhythm of song and sound is thus a force multiplier, building spatial awareness and connection through repetition. Wildwood Forest is a class space that is anchored by these rhythmic rituals of song and schedule and when I visit the forest site even after school hours, I feel the weight of this sonic space as a bodily expectation and wonder about the ways in which the students experience the same. In Wildwood Forest, the songs, leitmotifs, and imaginary play sounds are of the place, and the place is of those very same sounds. For the students, there can never be any separation of the two again. The educational sound design of Wildwood Forest which teachers and students so richly co-create in/with place relies so much on music, play, and imaginative sound making, and this ecology of sounds also queers linear time, providing a stage for thinking of “a child as a continuous reassemblage, allowing for irregularity, inconstancy and creativity.”²⁶¹ It

²⁵⁸ Riikka Hohti and Tuure Tammi, “Composting Storytelling: An Approach for Critical (Multispecies) Ethnography,” *Qualitative Inquiry* 30, no. 7 (2024): 598. <https://doi.org/10.1177/10778004231176759>

²⁵⁹ Michelle Duffy, et al., “Making Sense of Sound: Visceral Sonic Mapping as a Research Tool,” *Emotion, Space and Society* 20 (2016): 49. <https://doi.org/10.1016/j.emospa.2016.06.006>.

²⁶⁰ Duffy et al., “Making Sense of Sound,” 50.

²⁶¹ Farquhar, “Time in Early Childhood,” 410.

is a rhythm that makes room for improvisatory arrhythmia in line with the capacities and impulses of these young learners.

Experiencing sound is a deeply embodied act, and the ways in which sound and touch intersect is another critical component of understanding how sound creates this community of educational space. Revill writes that “the intersection of touch and sound is both more profound and more extensive than that of a simply physical bodily encounter. Once heard, sounds can sometimes seem to resonate in consciousness, dominating thought processes, apparently masking other thoughts and feelings whilst directing consciousness in what Ihde calls the ‘auditory imagination’.”²⁶² For Ramden, Airy, and the other students, sounds are visceral things, components of bodily encounters that make imaginary play feel vibrant, exciting, and alive. Those sounds and haptic experiences jumble in their auditory imaginations to create a Wildwood Forest space where the imaginative storylines are intermingled with the roots, rocks, birds, mice, and more of the space. In this way sound creates a narrative across external space and time, *and* blurs the distinction between the subject and object, between nature and culture, between so-called reality and wonder.

Lee studied traditional student development theory as part of her teacher training (thinkers like Piaget and Vygotsky) and believes that these senses of sound and touch are deeply important to young students and to the development of proprioception and compassion for one another and the forest. In this way, it is not just the properties of sound, but their resonances across traditional teacher training in student development

²⁶² Don Ihde, “Auditory Imagination,” in *The Auditory Culture Reader*, ed. Michael Bull & Les Back (Berg, 2003), 61-64.

theory that also contributes to the teachers' interest in designing an educational world that is rich in sound. Lee and the other teachers are not particularly shy about physical contact with the students, giving them hugs when asked for, rubbing their backs during rest time, or holding their hands when prompted. And yet these physical interactions between students fall into a nuanced area of educational policy, and they will certainly decrease as students' progress through school. As a form of touch, sound is a bridge between the touch-rich caretaking of these students' youth, and the touch-averse educational future that lies ahead. In other words, for students who crave and desire physical contact, singing together is a way of touching without touching. A song is a sonic hug.

When I asked him where to place my microphones, Summer would often point me to a spot out behind a small woodshed used to store cord wood for the class fires. The shed provided a sound fence on one side, and a couple of dense hemlocks hemmed in the other side creating a little sonic room where speech, song, and sonic play was more immediate and visceral, and yet still with good sight lines of the rest of the forest. To see this place through an ocular frame is to see its privacy as a little room, but increasingly I came to think of this as more of a sonic room due to the unique acoustic coziness there that did not exist anywhere else in Wildwood Forest. This was a room where one could feel the acoustics of space, with all its human and more-than-human actants. The idea that sound can be felt as much as heard resonates with Gallagher's theory of sound as affect, which I covered in chapter 1, in which he proposes that there is a "base layer" of sound, which tends to accrue or entrain other layers—motor responses, feelings, perceptions, meanings, memories and so on—but which does not require these layers, and is thus not

reducible to them.”²⁶³ In this formulation, the power of the sonic dialect of Wildwood Forest is not so much about the specific words or melodies of the songs, the goal of the song-games, or the little stories conjured up by the imaginative sonic play. Rather, the feeling of the sound itself in these students’ bodies is what connects and maintains this feeling of community. What this feels like in each student’s body is undoubtedly different, but this expansive framework helps to explain why so much sonic play is wordless, and why imaginative play has a great deal of embodied, if not discursive, meaning. When Rainbow wanders around the forest singing operatically, when Ramden revs up like a diesel truck, and when Summer sidles up to his friends to pour water from pitcher to pitcher silently amidst their sonic chaos, they are all doing a version of the same thing: feeling the movement of sound in their bodies and the ways in which it connects them to their fellow classmates in community. That vibrational sound is also always a unique reflection of the micro-climates of the forest and is likely one subconscious reason why Summer led me to the spots he did for sound recording. For Gallagher, thinking of sound as affect is also a way of decentering human audition and agency in sound production,²⁶⁴ and the community that is built through sound is inseparable from the place and the more-than-human critters that help to create it.

The Forest and the School as Sonic Actors

In this final section I want to write briefly about the influence of the forest, the weather, the seasons, and the built school environment of Wildwood Forest, a topic which also fills up the remaining two chapters of this dissertation. Lee has a seemingly

²⁶³ Gallagher, “Sound as Affect,” 43.

²⁶⁴ Gallagher, “Sound as Affect,” 44-45.

bottomless reserve of short children's songs about nature, one for every moment of the seasonal cycle and weather. During my springtime visit, the class sang songs about baby birds learning to fly, springtime flowers, maple sugaring, late winter snow, spring rain, and the change from winter to spring. Books for reading aloud as a group or during improvisatory story times were also hugely influenced by the seasons, and it seemed that a new perfectly themed book emerged from the shelves each day. One day, after the students returned indoors from a classic spring mud day in Wildwood Forest, the teachers pulled out a fun book about playing in the mud and casually read it to any interested students during lunchtime. Songs and stories are a simple way of marking time across the seasons and foreshadowing the wonders of the seasonal changes that are just emerging. The choice of these songs and stories was nearly always inspired by the weather and the seasons, and each day brought a new sonic layer of weather-inspired sound. The themes of these songs also proved to be a huge influence on the songs that students wrote during our songwriting unit which I detail in chapter 6.

Perhaps most importantly for the theme of this chapter is the ways in which the sounds of the Wildwood Forest classroom help create this sense of educational space, but the built environment of the school was also critical. The indoor classroom has an HVAC unit that constantly blows air, no matter what season or temperature. Though none of the teachers seemed to pay attention to it, it filled up my sound recordings and created some analytic challenges, though I soon found it had its advantages in the classroom. During my first afternoon visit to the class, the teachers turned on some gentle ambient music and I listened as students settled into their typical rest time activity after lunch, heading off to their assigned spots in the classroom to either take a nap or play independently and

quietly. Most students brought some sort of game, art project, or play figures to their spot, and as soon as rest time started, they began animating their play with little action sounds or dialogue between characters. It was a beautiful moment, a performance of the ways students use sound to animate play, and the students most engrossed in their independent play were often the most sonically active. The teachers permitted this type of quiet sound making, and the HVAC unit was a benefit rather than a burden, its constant whoosh acting as a white noise machine to create the privacy students wanted to dive into their own imaginary sonic worlds. Had the unit turned off, I wonder if the same type of imaginative sounding would have occurred.

The forest classroom, of course, brought its own repertoire of noises: wind blowing through the trees, raindrops on leaves, birds singing, insects humming and flying, and more. But these non-interactive sounds were much less inspirational to the students than the sounds that could be made through collaboration with forest materials, and in the spring of my fieldwork, new sonic treasures emerged almost daily: mud to jump in, water to pour between buckets and splash around, sticks to clatter against trees, rocks to be carried and dropped and carried and dropped from place to place, soft winter-deadened leaves to trample on and crumple, bugs to talk to and sing about, and much more. This sonic play was a performance of what Haraway calls “cross-species sociality”,²⁶⁵ what I came to think of as a sort of cross-species musicality. From my human framework, there is no way of really knowing the impact of all this musicality on the trees, the grass, the critters, and the birds, but the students themselves have carved out

²⁶⁵ Donna Haraway, *The Companion Species Manifesto: Dogs, People, and Significant Otherness* (Prickly Paradigm Press, 2003), 4.

this space in their multi-sensory ways, leading to ever more movement and change in the space and its sonic possibilities. These evolving sounds of spring became the soundtrack to my field recordings detailing a forest in bloom in spring, from the echoey sounds of bony winter to the foliage covered play in late May. It may be my sonic imagination, but I truly feel I can hear the warmth emerging as the recordings progress. Separating sound from bodily feeling in this way shows how our human experience of sound deeply influences our experience of weather and seasons, even beyond the obvious indicators like bird and insect song. Air temperature, humidity, and weather all affect sound, and separating the sound from the source is a reminder of the ways in which sound is integral to the creation of space and time. This interaction between schooling and place shows that there is no way to systematically distinguish between human sounds and forest sounds: they are all one, co-created together through the various processes of human-forest, nature-culture interactions, a hallmark of a truly place-based education.

Conclusion

We humans apprehend, interact, and create space and place through our senses; and it would be impossible to speak of a way of being in the world that isolates or elevates one sense above the other. In this chapter, I have centered sound as a critical element in the design of educational space, showing how compositional and improvisational sounds come to define the rhythms of education and learning in one pre-kindergarten class. In early thinking about this dissertation, I theorized, based on decolonial theory, that educational sound design would differ between indoor and outdoor settings. To my surprise, this proved not to be the case. Instead, considerations of sound, listening, and communication were consistent across indoor and outdoor settings, leading

to a holistic understanding of what constitutes this class's sonic dialect. In this classroom, teachers show students how to treat everyone and everything with care and compassion while cultivating a basic sense of the politics of agency across species and materials, in the process creating for themselves a rich sense of educational space and sociality. Spaces and places are many things and processes all at once, always changing, and the challenge for us humans is that most of those happenings elude human perception and attention. Sound is a critical element of that educational space for this classroom, but it is not the only way in which educational space and time is constructed and defined, and listening differently quickly led me to other ways of conceptualizing the types of interactions that students have in a place-based educational setting. In the next chapter I build on this sonic geography of educational space as I turn my focus to an event with decolonial reverberations.

CHAPTER 5 ∞ FOREST ENCOUNTERS

In chapter 2 I defined my theoretical framework for this dissertation, focused on the Latin American idea of decoloniality as a resistance to ideas of nature-culture dualism. I pointed out that in a settler-colonial context, a careful analysis of pedagogy might raise questions about the ways in which place-based instruction is still embedded with extractivist-capitalist ideas. It has been my hypothesis that this analysis might also raise new possibilities, including Greenwood's idea of "reinhabitation,"²⁶⁶ that provide a pathway for settler-colonial communities to regain a sense of place and relationality with our more-than-human and material surroundings. I pointed towards the work of Eduardo Viveiros de Castro, who defines the Amerindian relationship between humans and more-than-humans as a social connection, not merely a biological connection, which imbues trees and plants and animals with a sort of subjective personhood.²⁶⁷ There is now a rich corpus of work in the environmental humanities devoted to interrogating the nature-culture split, including Haraway's idea of "cross-species sociality" and Kohn's work on how forests are constituted of an "ecology of selves,"²⁶⁸ both of which I bring back into discussion in this chapter.

Here I tell the story of two encounters between humans and more-than-humans in the forest. The first encounter is between humans and a large rock, and the second with mice living in the forest. My goal in telling and interpreting these encounters is to show the tangle of discourses, actions, and storied narratives that influenced these encounters, and, in the process, interrogate some of the philosophical foundations that surround early

²⁶⁶ Greenwood, "Place, Land, and the Decolonization of the Settler Soul," 364.

²⁶⁷ Viveiros de Castro, "Cosmological Deixis," 476.

²⁶⁸ Kohn, *How Forests Think*, 16.

childhood place-based education in Vermont in an age of global climate change and environmental injustice. Though the thematic focus of this chapter is not explicitly the ecology of sounds that I explored in the previous chapter, my use of qualitative sound methods remains the same, and I explore the idea that listening differently—even beyond sound—is integral to these forest encounters. Following the story of the first encounter between humans and a large rock, I analyze the story through the lens of decolonial theory showing how teachers worked against student impulses to teach students a culture of care. In the next section on the anthropomorphized forest, I describe student and teacher interactions with Rebecca Mouse, and the ways in which she (and her fellow mice) became both subject, imaginary friend, muse, and eventually mascot for the class. Next, I draw on ideas from Viveiros de Castro about the social relations between beings, and from Kohn about non-linguistic forms of communication, to develop the idea that listening differently in place-based education is a multisensory and synesthetic act of attunement. Lastly, I analyze these encounters through Anna Tsing’s concept of the “arts of noticing”²⁶⁹ and conclude with a theory of an arts-of-noticing-light, designed for young learners and inspired by the happenings in Wildwood Forest, which I think of as the arts of wondering. As I show in the final chapter of this dissertation, Rebecca Mouse became a major songwriting inspiration as well, so the stories and themes that I explore in this chapter are also a precursor to Rebecca Mouse’s turn as musical muse for the young songwriters in Wildwood Forest.

²⁶⁹ Tsing, *The Mushroom at the End of the World*, 37-38.

Diamond Excavation Company

For most of the last two million years, Vermont has been covered by a thick glacial ice.²⁷⁰ Those glaciers, composed of up to sixty meters of compressed ice carried rocks, silt, and debris of all shapes and sizes as they crept along Vermont's surface, carving the land underneath and sometimes leaving rocks behind as a reminder of glacial impact.²⁷¹ Today, Vermont's rocky landscape is made up of a mix of these glacial rocks (sometimes called glacial erratics) and older rocks that formed up to 450 million years ago.²⁷² The Abenaki, one of several Indigenous tribes from Vermont, consider these stones "living beings"²⁷³ with souls and cultural histories, not mere objects strewn across a landscape. Through settler colonialist land grabs and the spread of disease, Europeans took control of much of Vermont starting in the 1700s as Indigenous tribes like the Abenaki were decimated or forced to flee, and in the early 1800s many Vermont settlers began raising merino sheep for wool.²⁷⁴ Most of Vermont's rocks remain locked underneath the surface of the soil, wrapped up in the roots of the forest, but once the landscape was cleared for sheep pastures, the freeze-and-thaw cycle increasingly pushed these rocks, now unimpeded by the rapidly disappearing roots of the forest, to the surface of these new pastures.²⁷⁵ Settlers in the 1800s removed these stones, by hand and with animal, stacking them into stone walls which were piled with brush to keep sheep in their

²⁷⁰ Tom Wessels, *Reading the Granite Landscape: A Natural History of America's Mountain Domes, from Acadia to Yosemite* (The Countryman Press, 2001), 42.

²⁷¹ Wessels, *Granite Landscape*, 37.

²⁷² Barry Doolan, "The Geology of Vermont," *Rocks and Minerals – Vermont Issue*, (1996): 224.

²⁷³ Christopher Johnson and Barbara Johnson, "The Animate World of the Abenaki," *Appalachia* 58, no. 1 (2006): 79. <https://digitalcommons.dartmouth.edu/appalachia/vol58/iss1/9>.

²⁷⁴ Tom Wessels, *Reading the Forested Landscape: A Natural History of New England* (The Countryman Press, 1997), 57.

²⁷⁵ Wessels, *Reading the Granite Landscape*, 44.

pastures. Wessels estimates that the number of stones New Englanders piled into now iconic stone walls between 1810 and 1840 was greater than the stone needed to build the pyramids in Egypt.²⁷⁶ Starting in the 1850s, sheep farming in Vermont declined due to a shift in the market for wool. Many settlers moved west looking for better soil, and Vermont's forests slowly began to regrow.²⁷⁷

The town where Wildwood Forest sits was more heavily farmed in the 1800s than it is now; it is likely that the forest classroom at Wildwood Forest was once part of a vast sheep pasture, and then a new forest starting in the late 1800s. Since at least the 1950s when the school was built, it remained a forest with little human interference until the forest classroom was designed in 2017, and the teachers and students began their gentle redesign of the site. At that time a local excavation company donated their services to remove some larger dead trees and dangerous snags. Parents and other volunteers cleared some of the smaller trees and built three structures, including a covered pavilion, an outdoor cubby shed, and a storage shed. Lee, a master at rope lashing, added a few swings using materials in the forest, and a fire pit was created for winter cooking and community gathering. Over the past eight years, little hands and feet have removed much of the understory, limiting the growth of new saplings and weakening some of the smaller trees. It is still a forest, but the roots have slowly been worn away, giving rocks a better chance of surfacing. As spring was just emerging in Wildwood Forest, Diamond, one of the students in the class, noticed the point of a rock sticking out of the ground a few yards away from the pavilion.²⁷⁸

²⁷⁶ Wessels, *Granite Landscape*, 57-59.

²⁷⁷ Wessels, *Granite Landscape*, 60.

²⁷⁸ This occurred on March 31st, the same early spring day that I detailed in much of the last chapter.

Lee is quite keen on noticing all the little rocks and roots that might cause a hazard, though she only removes or minimizes the major risks. She feels that the uneven ground of a forest is a perfect place for a child's physical and emotional development, scrapes, bruises, and all. "I have been playing in these woods for seven years and I never knew there was a rock here," Lee tells Diamond when he points it out to her. The rock, which has been floating in Vermont's crust for millions of years, was newly surfaced through the winter's freeze-thaw cycle, possibly eased by the human changes caused when turning this forest into an outdoor classroom. Diamond starts digging and soon several other students join in the excavation project. This immediately attracts Lee, who engages them in a conversation about how many children can work on this safely at one time. It is Diamond's project, and he suggests there should be two diggers, so the rest are relegated to watch while Diamond and Summer dig. Lee leaves them to their work, saying, "If you find any living creatures while you're digging, will you tell us?" The cold spring rain picks up, and the hole becomes a muddy, sensory playground, a site of exploration, and an urgent project all at once. Students are smashing into and around the rock with various tools trying to loosen the soil as Kristin floats over and asks questions about a revealed tree root that is attached to the top of the rock. "This root is attached to a tree, and this tree is using the root as a way to get water," she tells him casually when he asks. It is an offer of information without a hint of reproach. Up until this point, it seemed the students considered the root a nuisance, not some living part of the tree that stands next to the rock.

Lee returns and students and teachers discuss the root, suggesting that Diamond should consider leaving the root in place. Diamond is not particularly pleased about this

proposed obstruction to his work, but Lee tells him that “cutting that root would be like cutting off your own finger.” Diamond, disappointed but understanding the point, resumes work around the root. Allen Soy Sauce, who has been patiently waiting for a turn, decides to start his own excavation project. He gives Lee one of his “digging tasers” (i.e. a stick) and as soon as she starts digging, there is a loud crack. “Oops,” Lee says, “My stick just got a lot smaller!” Diamond and I strike up a conversation about different types of rocks and how they form (with my very basic knowledge of geology) as more digging projects pop up everywhere. Jewel, working on her own project, brags about how she chopped straight through a big root with one swing and Lee tells her, “Wow! We need to have a conversation about roots I think!” It is nearing the end of outdoor time, but the project will continue for another whole month as the children invent new ways of excavating and take turns digging.

When I next return to Wildwood Forest, I am excited to see what has happened to the large rock in my absence. I proceed directly to the excavation site to ask Diamond, who is digging with Ramden and Airy, some questions.

“What are you digging here, Diamond?”

“A rock. A big rock,” he says.

“Why?”

“Because we want to get it out.”

“What are you going to do when you get it out?”

“We’re going to sell it. We’re going to move it with our shovels though.”

“Sell it, whoa. Ok,” I say.

Rockin' Hawk has been standing around and says, "Diamond, I see something down there that's not the color of a rock. It's red and white!"

"What is it?" I ask her.

"I don't know!" she says.

"It's a root," says Jewel. After the first day of digging, the teachers taught a simple lesson on trees and roots and created some ground rules for digging around the roots. The students have clearly adjusted their digging practices.

I ask Diamond how he got the idea to sell the rock, and he goes through the story of how he spotted it in the ground, started digging, and everyone else joined in. Jewel tells me it is a ruby, not a rock, and Diamond agrees that it is in fact a ruby (he is hoping this will improve his sale price). Then, like an excavation crew boss, he shows me their technological advancements since earlier in the week. Since only two students can dig at a time for safety reasons, other interested students have started bringing water over from a nearby puddle, and they pour it over and around the rock at Diamond's instruction. This reveals the roots more clearly, so that they are not destroyed in the digging process, and it turns the soil into mud, making it easier to dig. Pat Etta points out that they are also going to sell the mud for \$1 since mud is a very hot commodity in Wildwood Forest (all sales are quite imaginary in this setting). The students have been digging a wide hole around one side, but the other side is a bit more unearthed. When I ask them about it, Lee tells me that together they decided not to dig out away from the rock anymore, but only next to the rock to preserve the root structure of the tree nearby. She quickly pivots to asking the students to tell me about all the different tools they are using, and their various merits. Jewel is hammering away with a child-sized shovel and then there is a blunt "thud," and

we all start laughing at the broken shovel. “That’s the end of that!” says Lee. Digging stops and all I hear is the sound of students trampling through the mud around the rock, breathing heavily and getting increasingly covered in mud as they start to slip around inside the hole.

“Whoa!” says Diamond.

“Waaaa!” says Ramden.

“Ahhhhh!!!” Diamond returns.

“Diamond, we won’t *try* to...” says Lee, trailing off, with a sigh. Mud: it is irresistible to almost every student today.

When outdoor time is nearly over, Lee and Kristin cook up a plan to have the children run through a giant puddle, one at a time, in the field next to the forest. They will get soaking wet, but the students will relish it, and it is better than trampling them through the school in their current condition. Though the tempo of digging slows down considerably over the next month, the excavation project continues with Diamond as crew boss. As the soil dries up and the attractions of spring grow, the students gradually lose interest in the project. The rock, likely several hundred pounds and clearly not going anywhere soon, lies open in its hole in the ground. Discussion turns occasionally to what should happen next, though no action or plan emerges. The teachers are keen to let the students keep working on it as it has raised interesting questions about trees, roots, and the small critters they find while digging. But the rock is in the middle of a well-trodden path, and it is obvious that eventually someone is going to get hurt one way or another. By early May, the rock has been mostly abandoned, parts of the hole filled in with leaves and needles from the spring wind. Then one day Diamond himself trips on the rock

during free play and lands nose-first in the hole. He comes up crying, with a bloody nose, and Kristin administers care as they discuss what to do next. As the tears dry up, they paint a picture of Diamond's bloody nose and Kristin helps him write a note that says "Watch Out! This is a bloody nose from the rock!" In the next couple of days, they all work together to fill in the hole, and the excavation project is over. Mining might be profitable and fun, but it is dangerous work.



Decoloniality in Wildwood Forest

The story of Diamond's excavation company is just one among hundreds of moments and narratives in Wildwood Forest that allowed me to grapple with the question of how students and teachers think of their relationship to the forest matter and its creatures. None of the teachers in Wildwood Forest had more than a basic understanding of decolonial theory, yet all were educated on issues of social and environmental justice. As I highlighted in chapter 2, decolonization has become a bit of a buzzword in today's social justice movements, and decolonial theory is vast and varied, with sometimes conflicting ideas coming from different scholars and their associated political movements around the world. Regardless of one's knowledge of decolonial theory, the case of Diamond and his imaginary excavation company provided an interesting case study for how to teach students about the wonder of our planet's materials and beings, and the challenges of living ethically in a modern world so saturated by narratives of resource

extraction and economic progress. Diamond is a student who, as his chosen pseudonym suggests, is interested in rare Earth minerals. Interviewing students and their families was beyond the scope of this project, but it is quite easy to see how Diamond might have picked up this interest from gaming culture, digital media, or even the imaginative play of his friends or family members. At the same time, these imaginary games and media narratives were equal to his basic joy in noticing a rock that nobody else noticed, and what I observed to be a sort of basic wonder about the rock itself: How big was it? Where do rocks even come from and how do they get here? Could we be strong enough and clever enough to move it? Wouldn't it be fun to thrash around in a muddy hole after months of sliding around on snow and ice? Diamond seemed to be listening to a tangle of signals from his own body and the rock itself, and without too much consideration, he followed that impulse. All these feelings and ideas were wrapped up in Diamond's enchantment with the rock, which is why it was also the perfect teachable moment, but one that Lee and Kristin wanted to nurture with care to keep the wonder alive for the rock, the trees and tiny creatures, and the little humans that were cohabitating with the rock in Wildwood Forest.

This balance of compassion for other students, teachable moments, and basic care for the forest creatures is a hallmark of Lee, Kristin, and Miss Alyssa's pedagogy. Throughout this dissertation I have used the term place-based education, which suggests a mix of the environmental, historical, political, and social at once, rather than strictly focusing on teaching scientific inquiry in and about the forest. In an echo of Viveiros de Castro's work on configuring the relations between humans and animals as social, the teachers of Wildwood Forest work to cultivate among the students an equal sense of care

and compassion for the critters, the trees, the rocks, and their fellow students. Through lessons and guided free play, the teachers subtly teach students that humans, plants, and forest critters are in their own way defined as subjects in their own narratives with unique needs, wants, and desires. For example, the moment that Diamond started digging, Lee was there to work through some basic ground rules about using tools to dig so that no other students get physically (or emotionally) hurt. As soon as the roots were exposed, Lee and Kristin explained to Diamond, Jewel, and the others that chopping a root is like chopping a human finger. The analogy works because the teachers have been building these ground rules around tools, safety, and care for other students all year long. The students have long known about their own pain, but much of this pre-kindergarten year, as the circle time activities detailed in the last chapter show, is focused on helping students read and respond to their classmates, friends, and family's emotions. For these young students, the message of the tree's roots seems to hit home, and though their adjustments are not perfect, they all keep a keen eye out for roots when digging, and it inspires an attention that was not present before.

A decolonial approach dictates that to treat matter and life as mere resources for economic prosperity corrupts the idea that humans are integral parts of their ecosystems, not actors outside of these systems. When we humans treat life or matter as a resource to be mined and extracted without a clear understanding of the impacts of that act, we endanger not only the life of others but our own human lives and the present and future health of our societies. By allowing Diamond and the others to proceed with their excavation project, the teachers walk a thin but low-risk line, allowing something that is potentially harmful to students, trees, critters, and the soil structure they all depend on,

but that can also be an example for other types of similar scenarios. In the end, a tree has been weakened, a nose was bloodied, and no doubt some creatures killed or displaced, but it is a less destructive situation than it might have been, and the students walk away having itched their ache for autotelic digging, satiated their curiosity about the rock, and picked up a few bits of knowledge about how destructive it can be (for trees, critters, little human noses, and matter alike) when they alter the landscape without thinking through the implications. This leveling of compassion and inquiry across matter and beings is indicative of Escobar's call for relationality in scientific inquiry. He writes, "by splitting cognition and affect and ideas from feelings in the interest of objectivity, science contributes to heightening modernity's tendency toward pathologies of isolation and violence, enabling scientists to get credit for constructive discoveries while avoiding responsibility for destructive ones."²⁷⁹ Wildwood Forest is a place where scientific inquiry is happening every day, and while the scientific knowledge that is being generated there is age-appropriate, the ethical lessons around scientific inquiry are quite grand. As Diamond's encounter shows, teachers in this class bring feeling and emotion into science by asking students to consider other perspectives. They are constantly asked to be aware of how their actions affect not only the trees around the rock, but their friends who may be digging alongside them. This is an easy ask in this tiny slice of forest, but for me it begs a larger question about inquiry, which is: How can we teach about the increasing complexities of relationality and cross-species/cross-matter ethics as students grow older and scientific inquiry becomes more complex? How often are these ethical engagements written into the learning outcomes for scientific inquiry in schools, and

²⁷⁹ Escobar, *Designs for the Pluriverse*, 89.

where are they mere afterthoughts? To answer these questions, I want to first turn to a more complicated example of multispecies encounter as a way of building a framework for a theory of the arts of wondering, a practice of inquiry that I learned from the teachers and students in Wildwood Forest.

The Anthropomorphized Forest

In chapter 2 I wrote about the ways in which animals and plants are given human characteristics in a wide range of children's media and school curricula. Anthropomorphizing is ubiquitous, and rather than arguing for or against it, I focused my attention on listening for deeper theoretical meaning in the narratives mobilized by this practice. While animals are constantly anthropomorphized in Wildwood Forest, the opposite is also true: students are constantly asked to wonder what it might feel like to be an animal, to put themselves in the place of a creature, in some cases to literally follow in their footsteps. The remaining pages of this dissertation will be filled with stories of Rebecca Mouse, a white-footed mouse that the teachers and students encountered living in an outdoor shed on the first day of school. To the students, Rebecca was immortal (in fact the original Rebecca Mouse is long dead, but each successive mouse that was encountered also became Rebecca Mouse, and the students assumed she was the same mouse, or at least played along with the performance). In doing so, I follow Lloro-Bidart's work on multispecies educational ethnography²⁸⁰ by considering how animal subjectivity and identity are formative factors in the cultural community of Wildwood Forest, and how the multiple Rebecca's lives were influenced by the humans in

²⁸⁰ Lloro-Bidart, "A Feminist Posthumanist Multispecies Ethnography," 256-257.

Wildwood Forest. Rebecca, attracted by the crumbs, snacks, and shelter of Wildwood Forest, took up residence in the shed and quickly became a focal point of inquiry, and later a muse for songwriting.

Though my fieldwork did not start until March, I learned the story of Rebecca's entanglement with educational pedagogy and other critters in Wildwood Forest through the teachers and students, as well as a large handmade book that the class made and illustrated titled *Rebecca Mouse's Dream*. The book is a series of observations, letters to and from Rebecca Mouse (Lee usually plays the part of Rebecca Mouse in these letters), and artwork inspired by Rebecca. With its mix of age-appropriate traditional scientific inquiry, artistic creativity, and cultural inquiry it reminds me of a multispecies ethnographic study by Kervinen et al. on student encounters with urban rats in Finland where students were "required to consider and try to attune to rats' atmospheres by negotiating the differences between human and rat ways of living in the city rather than merely reflecting on their own intentions and experiences."²⁸¹ Students in Wildwood Forest seemed to circle through many interdisciplinary ways of engaging with Rebecca, each with a different set of scientific, ethical, and artistic learning outcomes. It was also a project that was, quite simply, plain old fun. During first encounter, Rebecca Mouse was captured and temporarily put inside a fish tank for observation (she escaped shortly afterwards but would have been released anyway). While in the tank, students noticed basic things about Rebecca like the shape of her feet and ears, the color of her eyes, her

²⁸¹ Anttoni Kervinen, et. al, "Ratty Places – Unsettling Human-centeredness in Ecological Inquiry with Young People," *Environmental Education Research* 30, no. 7 (2024): 1138. <https://doi.org/10.1080/13504622.2024.2314037>.

little sounds, and her quickness, and they noted these observations down in the opening pages of their oversized book.

After she escaped, the students set a flour trap for her, using berries and seeds to attract her to a part of the shed where they had sprinkled flour in hopes that they might get a record of her prints. They made predictions about what would happen next, such as whether the seeds would be eaten, and what the flour would look like afterwards. When they came back to the flour trap, they found the seeds missing and multiple footprints, giving them a deeper connection to Rebecca, her motives and practices, and her tiny nighttime steps through the shed and forest. These interactions allowed the teachers to deliver standard science-based teaching about rodents and the types of food and environments they prefer, but unlike a traditional science lesson, it was a mere springboard into deeper and weirder educational terrain. Lee, up to her favorite trick, started writing letters to the students as if she were Rebecca Mouse. Her first letter was, “Dear pre-K, Winter is coming and I’m trying to find a good place to make my nest. Your shed is just so nice! Can I please build my nest here? Love, Your friend Rebecca.” Lee explained later that the teachers were doing their best to get Rebecca (and her kin) out of the shed. As cute as they are, mice droppings can carry diseases, and over the years mice have been destructive to the educational materials stored in the shed, so Lee hoped to keep Rebecca somewhat at bay if possible. Lee’s directive to discourage Rebecca is clear in the responses, which the teachers notated for students since they could not write yet. In his letter, Allen Soy Sauce wrote, “Dear Rebecca, I love you and don’t poop in the shed anymore. And then if you want a snack, you can have one. Rebecca, don’t even poop in

your diaper. And Rebecca, it's funny if you're going to wear clothes, and I still love you."²⁸²

All this eviction talk was a little sad, but the teachers were one step ahead because the final pages of the book are filled with printouts of mouse nests from the internet with student observations scribbled around them, and photos of the students building and decorating their own mouse nests for Rebecca (and her cousins) to live in. The nests are framed with cardboard which the students painted in bright colors and filled with the types of soft and fluffy materials that mirror nests from internet pictures and the nest they found in the shed. In these late fall photos, students have their winter hats and down jackets on, and there is a little caption next to each nest with some notes. Next to Carly's photo is the caption: "I put newspaper then leaves for Rebecca Mouse. She's going to love this house. The leaves and newspaper are warm and cozy for Rebecca in the winter. Now pine needles up to the top!" These long-term engagements with Rebecca Mouse, starting at the very beginning of the school year, seemed to set a standard for interaction with critters of all kinds. They set the default reaction of encounter to start with curiosity, communication, and engagement, opening the frame of possibility for a relationship to flourish. While the relationship with Rebecca Mouse was perhaps imbalanced, it was a real relationship nonetheless with all the joys and challenges that come along with it.

²⁸² It is hard to share just one of these letters, so here's another. Rainbow wrote "Rebecca Mouse, How did you get in that nest? How did you get in the trash can? What is your phone number? Rebecca Mouse you can make a new nest somewhere else. Sorry Rebecca, you can't live in the shed anymore." It is obvious from the letters that there were clearly many mice and chipmunks living in the shed and in Wildwood Forest at this time.

Perspective-Taking and Listening Differently

As the above two examples show, simple acts of perspective-taking are integral to the pedagogy of Wildwood Forest, and this perspective-taking is reliant on an expansive listening that reaches beyond sound and aurality. In the opening pages of this dissertation, I noted that listening differently is at the heart of this research, and that probing the possibilities and disrupting frameworks of sound is intrinsic to the field of sound studies. Gershon has pointed out the limitations to the idea that the sensorium is always constructed of five distinct senses,²⁸³ and in this section I want to explore the ways in which listening is always already a multisensory act. The theory of listening differently that I put forth in this section arises from Gallagher et al.'s notion that "mainstream education promotes impoverished practices of listening, focused on the reception of human meaning as conveyed through spoken language."²⁸⁴ For Gallagher et al., an expansive practice of listening recognizes that human speech is one small facet of sound, and that sounds may become meaningful to humans in a wide variety of ways "from the vague to the more precise,"²⁸⁵ and in this way is "*never only a vector for meaning.*"²⁸⁶ While the focus of their listening was on the ways in which educators listen to children, I want to explore the idea that listening differently also depends on multisensory and nuanced forms of communication that extend beyond aural hearing and listening. Our human reception of sound is dependent upon haptic and affectual sensations, and I want to propose that an expansive definition of listening differently is always already bound

²⁸³ Gershon, *Sound Curriculum*, 11.

²⁸⁴ Gallagher et al., "Listening Differently," 1260.

²⁸⁵ Gallagher et al., "Listening Differently," 1250-1251.

²⁸⁶ Gallagher et al., "Listening Differently," 1251. Italics in original text.

up in tangles of multisensory experiences and histories of enculturated listening and being, and that this listening is fundamental to an educational pedagogy for building interspecies relationships. A small population of humans have synesthesia, which is a blending of two or more senses (for instance, certain sounds or tones can produce sensations of color). At the periphery of this argument is a hypothesis that synesthesia might not be limited to a select few, not a thing one has or does not have, but a form of sensing that all humans have, in some capacity, which can be shaped through deep listening, education, and practice.

Wildwood Forest is made up of what Kohn calls an “ecology of selves,”²⁸⁷ and he writes that “To understand other kinds of selves, one simply needs to learn how to inhabit their variously embodied points of view.”²⁸⁸ This idea arises from Viveiros de Castro’s proposition that “Animals see in the *same* way we do *different* things because their bodies are different than ours” and that those bodies are “bundles of affects and capacities...which is the origin of perspectives.”²⁸⁹ Interspecies perspective-taking is therefore an act of empathy that requires some sort of communication—between tree and child, mouse and teacher—in order for this act of re/inhabiting to take place, but what, and more importantly, how? When we center the ocular and think of sound in classrooms primarily as a channel for human language, we place limits on both our understandings of the nuances of education, and the possibilities inherent in an embodied, sensory-rich experiential education. Those same limitations apply to interspecies relationship-making and perspective-taking. Kohn argues that all selves do some form of representation-

²⁸⁷ Eduardo Kohn, *How Forests Think*, 16.

²⁸⁸ Eduardo Kohn, *How Forests Think*, 132.

²⁸⁹ Viveiros de Castro, “Cosmological Deixis,” 478.

making, and that we have tended to rely too much on symbolic human language as a form of communication and understanding. He writes, “nonsymbolic representational modalities pervade the living world—human and nonhuman—and have underexplored properties that are quite distinct from those that make human language special.”²⁹⁰

In Wildwood Forest, the act of perspective-taking is therefore an interpretive one that involves understanding not what words or sounds a tree is speaking—a tree does not speak human language—but what its body, its form, is communicating representationally. We humans do so much listening *without* our ears. We listen to salads who tell us to eat them when we feel the need for some roughage. We listen to feelings in our bodies that give us warnings, encouragements, dreams, and enchantments, a listening so ubiquitous that we forget we are even doing it sometimes. Children listen to soft ferns who visually tell them to touch them. As I showed above, children listen to rocks and hear them asking to be dug up. Muddy puddles scream at children, telling them to dive right in, and dirt says to those same children, Please put just a little bit of me in your mouth for I have some nice mineral or bacteria that your body is craving. It is not just humans who are listening across species and matter in this way. Birds listen to berries who tell them to eat them and poop out the seeds in the next forest over so they can take a quiet nap and then grow once again next spring. Mice and chipmunks listen to seeds to gather and store them, and the seeds hope to end up in a hole in the ground so that they can germinate and grow into more trees to feed more rodents. This listening is a form of communication that humans, birds, and rodents do, and it is not just a listening to the plant, it is a listening to our own bodies with all the experiences and capacities that Viveiros de Castro has

²⁹⁰ Kohn, *How Forests Think*, 8.

described. It is an Oliveros-style deep listening that is caught between the natural and the cultural because listening is equally about our own bodily perceptions of sound or vibration *and* the ways in which other species are listening and non-linguistically but still representationally communicating with us. It is a listening to place and environment that is in line with Sauvé's definition of the environment, the "historical, cultural, political, economic, emotional" entanglements that are co-constructed with the critters and the matter.²⁹¹ This is Viveiros de Castro's "social construction of the body"²⁹² that is co-created through multispecies entanglements, articulates both the subjecthood of plants and animals, and defines the limitless possibilities for interspecies social relations. It is through this communication that students learn the basics of what it might be like to be in the body of a tree or a mouse, to take that perspective and feel the world through a different set of capacities, affects, limitations, and possibilities.

Much of what I have described above is not necessarily about normative understandings of sound, but it is most certainly about communicating. Kohn's argument rests on the idea that non-linguistic communication is the vehicle by which we might configure real relations and entanglements, and learning to listen to those signals is essential, despite the various limits of our cultural human frameworks. Many of these impulses exceed (or augment) audition and rely on multisensory or synesthetic social interactions with the forest, and yet listening, which is beyond the visual gaze or the impulse to touch or satiate, is still the best word for what is happening here because these happenings are fundamentally about communication, a vibration or a resonance between

²⁹¹ Sauvé, "Currents in Environmental Education," 17.

²⁹² Viveiros de Castro, "Cosmological Deixis," 480.

two subjects. Gershon writes that “Theoretically, if everything vibrates, then everything—literally every object (animate and inanimate), ecology (“natural” or “constructed”), feeling, idea, ideal, process, experience, event—has the potential to be affect and be affected by another aspect of everything.”²⁹³ The challenge for place-based educators, then, is to somehow configure a listening that is specific to the environment where they deliver their pedagogy, to define the terms of the engagement based on careful and patient engagement with the place they have come to know and the multispecies engagements there. Sterne points out that “the boundary between sound and not-sound is based on the understood possibilities of the faculty of hearing—whether we are talking about a person or a squirrel. Therefore, as people and squirrels change, so too will sound—by definition. Species have histories.”²⁹⁴ It is that faculty of hearing, the possibility inherent in listening differently, that is at the root of both sound studies and place-based education and the search for a more just and response-able reinhabitation. I believe we humans have the capacity for an even more attuned listening than we give ourselves credit for, and yet most of us have not developed those skills to fully listen in the ways I am imagining here, myself included. There is a wide array of scientific tools being developed to listen at frequencies beyond audition to hear electrical and other signals beyond human audition, and it is easy to imagine a Haraway-inspired technofuture where these technologies are fully bio-hacked into our bodies. But those technologies are beyond the scope of this dissertation, and for now I want to focus on the reverberations that Diamond’s rock and Rebecca Mouse caused in the classroom, and the

²⁹³ Gershon, “Vibrational Affect,” 258.

²⁹⁴ Jonathan Sterne, *The Audible Past: Cultural Origins of Sound Reproduction*, (Duke University Press, 2003), 12.

ways in which teachers in Wildwood Forest engaged in conversation with these events. Despite not having the skills to have a full interspecies conversation, we have some robust tools, and in this next section I articulate the state of unknowing that circumscribes the act of listening differently to wonder in Wildwood Forest.

The Arts of Wondering

It is clear to see how, by the start of my fieldwork, Rebecca Mouse had become an integral actor in the class community. Rebecca may have started off as a simple field mouse bedding down in a shed, but over the course of the year she morphed from an object of scientific inquiry to the subject of her own narrative. Rebecca was not the nuisance that most mice are painted to be in the Vermont autumn, but a being that needed shelter, sustenance, and love, just like the students. Over the course of the year, Rebecca ceased to be one thing and became many, and in doing so the students understood that she is a creature both strong and fragile, mysterious and obvious, friendly and skittish, wild and in need of a soft, warm, home. In this process, I see the foundations of a decolonial pedagogy where Rebecca is a complex being who is understood as being both nature and culture. With support from the teachers, she bridged the binary and become more real, and more like the students. These lessons do the important work of pedagogically “centering animal lived experience”²⁹⁵ through an activation of the students own basic instincts for food and shelter, building a framework for a world where humans recognize the political imbalances between species and then mobilize our creative spirits to try and be better neighbors. As a narrative of educational pedagogy, this mix of scientific

²⁹⁵ Lloro-Bidart, “A Feminist Posthumanist Multispecies Ethnography,” 258.

observation, creativity, improvisation, compassion, inquiry, and wonder was just one small way of enacting a decolonial approach to place-based education.

Tsing's urgent call for practicing the "arts of noticing"²⁹⁶ has by now become an important and widespread idea in many environmental fields. Her argument is that we need to focus our noticing, in anthropological, scientific, and artistic ways, on our fragile human relationship with the places that sustain us, and the ways in which capitalism is making it harder (or easier) for certain species to thrive. Throughout my fieldwork, I was teachers explained to me that the worldview of a four- or five-year-old is quite small. For many students, this was the first year of school, and for all, their first year at a new school. Each day therefore put them into new, exciting, and often challenging sensory, emotional, and social situations. While on the surface, the "arts of noticing" is a basic idea, Tsing's definition has a much deeper implication for noticing the impacts of global capitalism on species and places and is therefore well beyond the reach of these pre-kindergarten students. But as I have shown in this chapter and the previous one, students in Wildwood Forest were constantly looking, listening, feeling, smelling, and even tasting the world around them, encouraged by teachers who strive to leave inquiry as open-ended as possible. As the two encounters above show, students were constantly probing the forest and asking questions (verbally and through their actions) and teachers rarely gave an answer; most questions were met with a return question, an incomplete answer, or an encouragement to keep asking more questions and communicating with the idea, the critter, plant, or matter in focus. For example, while Diamond was off in the early stages of excavation, an inspired Allen Soy Sauce was busily turning over stumps and digging

²⁹⁶ Tsing, *The Mushroom at the End of the World*, 37-38.

near the mud kitchen. There he uncovered a labyrinth of underground tunnels which he believed to be made by chipmunks, quickly calling everyone over to take a look. As more students arrived, Kristin, as usual, did her best to keep everyone in this state of inquiry and wonder, resisting Allen Soy Sauce's certainty, asking students if they agreed that it was a chipmunk tunnel. This line of wondering and communicating from Kristin inspired one student to grab a set of binoculars from the shed, and another to use a stick to test tunnel depth—two ways of listening differently to the signals left behind by the tunneling animal. In line with these careful arts of wondering, Rockin' Hawk and Rainbow found a worm and a centipede at the site, and Kristin and Lee guided them towards the small cages that could be used to bring these little creatures inside for examination under the class's new microscope. There is certainly an "arts of noticing" moment here: over the last seven years, chipmunks and mice have slowly populated this forest classroom, munching on the crumbs and discards of student snacks and lunch. It is a paradise for any small Vermont rodent, and they have become a constant source of wonder for the students. This change has been obvious to all, but only as a passing thought, not at the level of Tsing's noticing, which might grow into a journey to understand how rodent numbers may have increased due to human settlement in this classroom, and in many locations around the world.

Kristin, as an assistant teacher without many of Lee's management duties, was often around when students were noticing these changes in the forest, and she worked to keep students wonder alive, what I came to think of as the arts of wondering. Kristin spent much of her outdoor time keeping students in this state of wonder for as long as possible, and she always did so with a smile and a look of surprise and encouragement. A

typical arts-of-wondering moment started with a student observation: maple sap is running, a bud is growing on a tree, a bug is crawling out of a little hole, a bird is singing in the trees. For many of us, children and adults alike, our first impulse is to claim some sort of knowledge about what is happening, but teachers worked hard to suspend this knowing. Are we certain we know what we think we know? More questions are asked, little experiments might be conducted, more opinions are gathered, and still teachers work to resist certainty by asking students to go deeper, to learn more, to search for connections, modes of communication, possible storylines, representational reverberations, and multispecies engagements that might inform what is happening. Why would these tunnels be made here in the winter? What is the size of the tunnel telling us about the body of the animal, its representation in place, its vernacular architectural designs? How could we learn more, through books or other resources, or by asking other people who might have more experience or knowledge in this area? Throughout the arts of wondering, there are moments of helping students to consider how they can be careful and compassionate. If it is a chipmunk hole, and the chipmunk is still in there, is it ok to dig around with a stick? If that chipmunk is skittering around the forest, what is it trying to tell us through its movements? What else is near or around this hole, and what might it tell us about how chipmunks co-exist with the flora, fauna, humans, and matter of this place?

In this situation, like others, none of the teachers ever flat out confirms that, yes, this is a tunnel made by chipmunks or rodents, just like they never shut down Diamond's excavation project even though they have concerns about tree and student safety. Lee told me that her goal is to say "yes" five times more often than she says "no" in the

classroom, encouraging students to stay with the wonder, and in the case of the chipmunks, to think about how these tunnels are connected to other processes happening in the woods as the seasons progress. This type of arts of wondering is also very much in line with Haraway's encouragement to "stay with the trouble,"²⁹⁷ only framed in the positive for these young learners: stay with the wonder. While the complexity of Haraway and Tsing's call is miniaturized for these young ones, this practice of the arts of wondering, by staying open to possibility, builds all the blocks for understanding connection to place, and for always seeking to go deeper with the complexity of those questions and their constant change. This approach is also in alignment with Massey's theory of place as ever-changing, a product of the constant interrelations between human, animal, forest, and seasons.²⁹⁸ If place is always changing, then what we knew yesterday will need to be reconsidered anew every day as a question to the place around us, and there are signs of those subtle (and in springtime, not-so-subtle) changes daily in Wildwood Forest that remind us of this constant dynamic. Reinhabitation, like decolonization, is not a straight line of progress; it is a series of unending cycles that bring us back to the moment.

Haraway writes that "staying with the trouble requires learning to be truly present, not as a vanishing pivot between awful or edenic pasts and apocalyptic or salvific futures, but as mortal critters entwined in myriad unfinished configurations of places, times, matters, meanings."²⁹⁹ Time spent with these very young students who have a narrow worldview and a psychedelic sense of time was also a wonderful reminder to me and the

²⁹⁷ Haraway, *Staying with the Trouble*, 1-3,

²⁹⁸ Massey, *For Space*, 9.

²⁹⁹ Haraway, *Staying with the Trouble*, 1.

other adult teachers to momentarily drop the concerns that modernity places on us, and to linger a bit longer with the wonders we experienced as children when we first stepped into a forest. We have an educational system that, for all its strengths, drags many students away from this wonder. US educational pedagogy today is obsessed with knowing facts and developing certainty about ideas. Standardized testing and even the most creative of outcomes-based educational models require students to constantly prove what they have learned as a requirement for onward momentum in the tunnel of educational time. To think of education as a practice of wonder is to flip this script, to ask students to prove not what they know, but rather to show an expansive hunger for understanding the complexities of the world around them, to linger in what they do not yet know. This then is the credo of the arts of wondering: listen differently, ask questions, suspend knowing, chase wild ideas, make art, and challenge your own theories. Repeat daily.

This chapter shows two examples of the challenges and opportunities for a decolonized place-based education in one Vermont school. The approach in Wildwood Forest allows children's curiosities to lead and inspire curricular approaches, and teachers take an active role in guiding education while also keeping wonder alive. There are no grand narratives of climate change education or environmental injustice here. Instead, Wildwood Forest is filled with tiny moments of free interaction and communication, and some of them bloom into larger pedagogical encounters, like the two I describe above. Many other moments pass in a flash, and these experiences add to an already rich canon of sensory encounters with the forest, giving the students confidence and encouragement in forest settings. Yet the teachers in Wildwood Forest remained convinced that these

authentic encounters with the more-than-human critters and matter in the forest are critical building blocks for a lifelong engagement with the outdoors, in whichever way these young students choose to define that. In the next and final chapter, I show how the sensory encounters I describe here and the rich song, sound, and story world I detailed in the previous chapter culminated in a songwriting activity that became a capstone to the pre-kindergarten year.

CHAPTER 6 ∞ ROCKIN' REBECCAS'S SONIC FABLES

My research has been concerned with situating and resituating learning through sound by exploring ambient and intentional ways in which the ecology of educational sounds and listening practices inform place-based education. In this final chapter, I turn to intentional and relational sonic explorations that show how songwriting makes place, and place inspires song, for young students. For two months in the spring of 2025 there was a shambolic band of students, teachers, and adult musicians called Rockin' Rebeccas that performed art-folk music in the woods of Vermont. Rockin' Rebeccas was one of a handful of possible band names considered by students and teachers, and Rainbow's father convinced the band during drop-off one morning that it was the obvious best choice given what the class and Rebecca had been through together.³⁰⁰ Rockin' Rebeccas's songs were conceived, kindled, and performed in the forest near their school, and the songs live there still, in the soil and trees, and the "auditory imaginations"³⁰¹ of the people who sang them. There are all types of songs in this world: love songs, breakup songs, political songs, nature songs, story songs, and so many more. Rockin' Rebeccas's songs demanded the listener to wonder and ask questions along with the band, and to be a participant in song. For Rockin' Rebeccas, there could never be a separation between artist and audience because the specter of professionalization that dictates so many of the practices of music performance and listening for us adults was non-existent for these young rockers. Rockin' Rebeccas's songs were not always rational, and when songs are abstract, fantastical, incomplete, or unframed, the listener is invited to complete them in

³⁰⁰ As a surprise, Rainbow's father designed and printed band t-shirts for the students, teachers, and musicians involved in the project, and he gifted them to everyone on the last day of school.

³⁰¹ Don Ihde, "Auditory Imagination," 61-64.

their own way with their own litany of experiences, sprinkled with a dash of whatever emotion they may be feeling in the moment of listening. In this way, the songs provided an invitation to hear what we want to hear, to make meaning only where we want meaning. In this chapter, I describe and analyze these songs, their fictions, and their possible truths to explore how Rockin' Rebeccas's songs "illuminate and generate the plural possibilities of the landscape as an environment that involves everything that it is and everything that it could be."³⁰²

Building on the previous chapter, I explore sound's unique ability to enhance the arts of wondering in place-based educational pedagogy, and the ways in which this sonic arts of wondering "reveals the invisible mobility below the surface of a visual world and challenges its certain position".³⁰³ I show how, on a basic level, the process of songwriting and the resonances created through singing together in community are as important as the meanings and narratives invoked in the songs. In this way, the songwriting in Wildwood Forest reminds me of Bread & Puppet Theater's *Cheap Art Manifesto* which encourages the making of art as a daily, ephemeral, even disposable act that prioritizes process over product, rhythm and repetition over perfection. "Art has to be CHEAP & available to EVERYBODY. It needs to be everywhere because it is the INSIDE of the WORLD."³⁰⁴ In this chapter I show how these songs are affectual, embodied rhythms and forms of touch, which are threads of a growing connective tissue between humans and more-than-humans in the forest classroom. In this way, Rockin'

³⁰²Salome Voegelin, *Sonic Possible Worlds: Hearing the Continuum of Sound* (Bloomsbury, 2014), 13-14.

³⁰³ Voegelin, *Sonic Possible Worlds*, 3.

³⁰⁴ Bread & Puppet, "Cheap Art Manifesto," Originally published in 1984, <https://archive.org/details/whycheapartmanif01unse/mode/2up>. Capitalizations in original text.

Rebeccas’s original songs work, as Labelle puts it, to “shudder the articulated and delineated forms of sociality, cohering instead around the deep matters and shared atmospheres often supporting more intimate relations.”³⁰⁵ This chapter is therefore equally about how the process of songwriting, of bringing affectual sonic layers and sensory experiences to bear on the act of creation, can bring human understandings of place and time into a tighter embrace regardless of what the songs are about. In earlier pages of this work, I argued that children have a unique vantage point and set of skills and wisdom to bring to bear on the work of fighting climate injustice. Here I show how attenuating to a childlike sense of wonder when creating art can link communities to rituals of practice around human-place-critter relationships.

In the first half of this chapter, I describe and share many of the songs written together, noting the inspirational threads that led to their composition. The songs are not particularly long or complicated, and many of the students were prolific songwriters, so there are more songs than can be described in this dissertation. In the pages below I share and describe only a portion of the songs, which I feel represent the breadth of the students’ and musicians’ ideas and approaches to songwriting. While I am prohibited from sharing my own sound recordings due to IRB restrictions, many of these songs were posted publicly on the class’s blog site, and I embed portions of these sound recordings when doing so does not reveal the identity of the children. This first half of the chapter starts with a brief reiteration of the songwriting process before I describe many of the

³⁰⁵ Brandon Labelle, *Sonic Agency: Sound and Emergent Forms of Resistance* (London: Goldsmiths Press, 2018), 3.

songs, divided into three separate categories: songs about animals, songs about movement, and songs that animate the seemingly inanimate.

The latter half of the chapter is devoted to theorizing about sound and songwriting as tools for exploring what Haraway calls “speculative fabulation,”³⁰⁶ what I came to think of as *sonic fables*, a musical expression of speculative fabulation. My analysis focuses both on the content of the songs and what they might mean about students’ relationship to the forest and to the rest of the class, as well as the ways in which songwriting and its associated processes contribute to the development of intra- and inter-species community building and awareness. I start by mobilizing Walter Benjamin’s theory about the aura of artwork to show how these songs became ritual attunements to place in Wildwood Forest. Following this I explore how these songs are examples of speculative fabulation and relate them to a rich history of ecologically minded imaginative artwork created with and about companion species. I conclude on an imaginative note, writing about sonic fabling as a practice of wondering in place, or reinhabitation.

Before we proceed, I want to raise the possibility that I have completely over-examined everything here, since these are simply young children who thought very little about what they were writing about in the moment. And yet, they wrote what they wrote for a reason, even if it was tossed off or careless. The songs now exist in the world, they exist here in this writing, and they are resonating through deep time and space as you read this. The beauty of music is that it requires both a creator and a listener, and listeners interpret and make meaning out of songs that often exceed the writers’ intentions. I invite

³⁰⁶ Haraway, *Staying with the Trouble*, 213.

you to hear what you want to hear, and hope my explications provide some inspiration on that journey.

The Songs

Like all compositions, Rockin' Rebeccas's songs are indebted to a history of listening and composing, but they also circumscribe something emergent or convey timeless messages in fresh ways. As detailed in chapter 4, this pre-kindergarten class is rich in sound and song, and the songs that Lee and the other teachers integrate into the class are short and concise, movement-oriented, tuned to the seasons and the lifeways that they inspire, and fun. Rockin' Rebeccas's songs show this influence quite clearly, and many of the songs feature the creatures active in the spring of Wildwood Forest. Before this songwriting unit (and before my arrival in the classroom as a researcher), Lee and the other teachers implemented a unit on storytelling, and some of the students' first attempts at songwriting show a legacy of this story-focused approach that is more narrative than poetic. As the weeks proceeded, the topics, themes, and general style of the songs expanded, inspired by little moments of interaction with the critters of the forest. Lee did not set concrete times in the schedule for songwriting. Instead, starting in late April the three teachers and I notated song lyrics for students in their songbooks whenever an idea for a song emerged, typically during rest time, free play time outdoors, and other unstructured moments of the day. Our goal was that each student would have at least a few song lyric ideas for the songwriters to put to music in May. Some students took to the task with more excitement than others, but despite their commitment and interest, each song is characteristic of the writer, not unlike the "embodied experiential metaphors" that

I wrote about in the introduction.³⁰⁷ However, in the case of the Wildwood Forest students, the fantastical and the imaginary are much more prominent than they were when I worked with 3rd graders on their sonic inquiry project, detailed in the introduction of this work.

At the start of the unit, we wanted to show students how their song lyrics could be turned into music, and one warm morning we split the students into two groups to write a song, start to finish. The previous day the class had encountered the latest version of Rebecca Mouse camped out in a snow sled in the storage shed with five baby mice. The teachers moved the family of mice into a terrarium for interaction and observation before they let them loose in the forest later that day, and this latest interaction with Rebecca Mouse was clearly still inspirational to the young songwriters. Lee invited each group of students to share song ideas and explained the basics of the process, encouraging each student to add a line of lyrics to our new song. The first group was interested in writing a song about Rebecca Mouse, Adventure Wormy,³⁰⁸ or what it feels like to be a small creature; the second group considered writing about a fairy, a cat, or Rebecca Mouse. In the end, both groups wrote about Rebecca Mouse, the first called “[Rebecca Mouse’s Night](#)”³⁰⁹ and the second called “[Rebecca Mouse’s Instrument](#)”³¹⁰ which eventually became a class favorite, partly because the kids could shout out different instruments to make up new verses of the song (tiny saxophone was the most common).

³⁰⁷ Thorsnes and Frederiksen, “Embodied Experiential Metaphors,” 53.

³⁰⁸ Adventure Wormy was an earthworm that Rockin’ Hawk captured in her driveway and brought to school on the bus one morning, causing a spectacle in class. Like other small critters, Adventure Wormy was kept briefly for interaction and observation and then released.

³⁰⁹ <https://drive.google.com/file/d/1N0UC8GVK0UPLoQSIKEWd3fTzHRJKOGCC/view?usp=sharing>.

³¹⁰ <https://drive.google.com/file/d/1Qav5OVyTyBBSUn7C0kiZD6hJ6yfnzpP/view?usp=sharing>.

Rebecca Mouse had an instrument

An accordion

She played with it all day

She took a break and ate a snack

And took a quiet nap, morning time

And took a quiet nap, morning time

This first songwriting session was quick for both groups (from start to finish, the second group took just 13 minutes to write and record this song) but it provided a roadmap for students to understand the major steps of the songwriting process, from song idea to lyric to musical composition to recording to performance. The second group had some musical energy to expend, so in the recording we play it twice, and allow the students to play drums on the second pass, a wild and wonderful moment. As the reader can tell from this and other recordings, playing drums on a song means going arrhythmically bonkers on a toy percussion instrument with a random stick that you pick up in the forest. I cannot remember what the other group of students was screaming about in the first part of the recording, but since this is the first time that the reader/listener is encountering a sound recording of this class, it is worth pointing out that this level of sonic excitement was not particularly unusual. After this first session, most of the songs were written in a staged process, with students dictating song lyrics to me or one of the teachers who wrote the ideas down in their songbooks, which they each decorated with their names and artwork. Most of the songs (with a few exceptions noted below) were written during one intensive week during which three different songwriters (including me) spent a morning with students to create music for the songs. Each songwriter would

sit with a student and discuss the lyrics before setting one or two of them to music. Students would give some basic instructions about the song (fast, slow, happy, sad, etc.) to inform the musical composition. The recordings that I share from here on out were all made just after the song was written and are all rough drafts, before we had a chance to rehearse them and present them at the schoolwide Arts Night which happened at the end of May. I categorize them into three different major thematic areas: animal songs, adventure songs, and animating flora and matter. In addition to thematic similarities, this categorizing informs the analysis and discussion in the second half of this chapter.

Animal Songs

Small forest creatures were by far the most popular song subject for Rockin' Rebeccas. Spiders, birds, beetles, mice, ants, inchworms, Rebecca Mouse, and Adventure Wormy were all song topics, and every student wrote a critter song at some point. These animal songs are split into two camps: songs that describe the actions of these creatures in rich detail, and songs where students take the perspective of the animals, often giving them human-like tendencies. Some of this stems from the encouragement of us adults, who would often prompt students to write songs after animal encounters, especially if students were unsure what to write about or searching for subject matter. Because of this, several of these songs were written and recorded in the moment rather than the staged approach that characterized much of the project. One morning in early May, Rainbow, Pat Etta, and I were sitting around playing with toy instruments when Rainbow spotted a small black beetle crawling through the leaves and dirt. On the spot, Rainbow wrote the

song “[Black Beetle Where Are You?](#)”³¹¹ and we recorded it together, with Rainbow and Pat Etta playing loud drums and dancing around while I sang and played the guitar.

Black beetle, black beetle where are you?

Black, black, stiff and black

Black beetle, black beetle where are you?

You are blending with the dirt

The song, with its propulsive drumming, feels like an invitation to the black beetles to show themselves and dance along with their human friends, and it demands movement amongst both performers and listeners. Diamond wrote another song called “[Inchy](#)”³¹² in the moment during our last day of songwriting when a playful inchworm appeared on his shirt. The song brings childlike wonder to a small interaction with the inchworm through a process of noticing, wondering, and asking.

How did you get on me?

Why are you green?

How did you get on me?

Why do you eat leaves?

How did you get on me?

How many colors do you have?

Why did you get on me?

An inchy got on me!

“Inchy” resonated with many of the children because unlike some other critters, like

³¹¹ <https://drive.google.com/file/d/1IPDHjm9IUJp5Ak2TyqtEbtnMoA8OR6lv/view?usp=sharing>.

³¹² https://drive.google.com/file/d/1xn7D0vbk7xy4kyM6ZDu4u7bGx_nXnbbn/view?usp=sharing.

mice, spiders, and ants, green inchworms make a habit of stowing away on clothing and showing up in unexpected places, sometimes hours after forest playtime had ended. The boldness of these inchworms was impressive to the students.

Though Rainbow’s rocker beetle song was a favored dance number, Allen Soy Sauce was the first to kick-off the beetle-song frenzy with his song, “[Beety \(for the Black Beetle\)](#)”³¹³ in which the singer is invited to repeat the word beetle as quickly and as many times as they like before moving to the second line. Allen Soy Sauce is a lover of bugs, and he likes to search for them, pick them up, observe them closely, and let them crawl over his body and face. His fascination is often ineffable to him though, and his songs feel more like basic chants where he imagines himself as a beetle skittering through the soil (or an inchworm, as in the second verse, and a spider in another song).

Beetle, beetle, beetle, beetle, beetle...

Takes a little nap

Beetle, beetle, beetle, beetle, beetle, beetle...

Wears a snuggly cap

Inchy, inchy, inchy, inchy, inchy...

Takes a little nap

Inchy, inchy, inchy, inchy, inchy...

Wears a snuggly cap

Though he did not take many naps when I was there, Allen Soy Sauce loved wearing snuggly winter caps. The idea of an animal taking a nap was possibly copied from

³¹³ <https://drive.google.com/file/d/1ttrNyIYHEW51idAxiZc1wJq9q1GBppPj/view?usp=sharing>.

“Rebecca Mouse’s Instrument,” and it shows up in other songs as well, along with other daily childhood rituals.

Summer was reluctant to join in the project at all. He wrote just two sets of lyrics, both about Rebecca Mouse, and was too shy to sing or play music in either of them. I spent a good deal of time working with Summer, trying to coax some lyrics out of him, hoping that we would have something to share with the group and the family community at the end-of-year Arts Night. His one recorded contribution was “[Rebecca Mouse](#)”³¹⁴ in which he sticks as close to the script as possible, assigning Rebecca Mouse to activities experienced in his own life.

Rebecca Mouse is playing inside

She is reading a book

She likes dinosaurs

Rebecca Mouse takes a bath

I knew from the start that Summer would not sing the song with me, so I gave it a bit of an extra flourish at the end, and his sly smile after each performance indicated he was proud of the song he had written, even if he was a reluctant performer.

Rebecca Mouse was not the only critter who was given human qualities. As I mentioned in chapter 4, student-spider interactions were common on a metal structure on the playground, and discourses around spider creepiness seemed to inform the ways in which students interacted with spiders. In Rockin’ Hawk’s popular song “[The Spider’s](#)

³¹⁴ https://drive.google.com/file/d/1PjglipofruJ53FEniUFV8K49pV4K2q_N/view?usp=sharing. The sound that begins around 37 seconds is the infamous and ubiquitous Rambulance clattering through the forest.

Dream³¹⁵ a spider is a character in a spooky Halloween thriller, though this time spider is the innocent party.

*One night the spider went to bed
He had a creepy dream
A ghost was haunting his dream
“Boo ooo oooh, boo ooo ooh”
Spider fell out of bed and said “Ah!”*

“The Spider’s Dream” quickly became a favorite because students could add their own creepy noises in the fourth line, and everyone loved to scream in mock terror at the end of the last line. Rockin’ Hawk was also the only student to become a character in a song that another student wrote based on her friendship with Adventure Wormy, the earthworm that she brought to school one morning that caused a minor sensation. In homage to this interspecies friendship, Pat Etta penned “Adventure Wormy.”

*Adventure Wormy, Adventure Wormy
Adventure Wormy is Rockin’ Hawk’s friend
Adventure Wormy loves flowers
Adventure Wormy stays in dirt*

Since the song includes Rockin’ Hawk’s real name, I am unable to share this recording, but it became popular amongst students because one of the guest songwriters gave it a wonderfully lazy and melismatic line, reminiscent of a worm squiggling around in the dirt.

³¹⁵ <https://drive.google.com/file/d/1cnw4PXeo0D5-mmedZ2AiXwGK-rAzNZCo/view?usp=sharing>.

Though most of the songs give animals some human agency or anthropomorphize in one way or another, a few songs included simple descriptive observations and animals, and both were about birds. Within the canon of class songs, these birds' ability to fly seemed to put them in a category apart from students, certainly making it less likely that students could physically interact with them like the beetles, inchworms, earthworms, and even Rebecca Mouse. Jewel wrote a carefully observed song called "[A Nest](#)"³¹⁶ which describes a bird building a nest in spring.

Birds carry hay in their beaks

Birds carry sticks in their beaks

Birds carry feathers in their beaks

Pat it down, pat it down

Lay the eggs!

Rockin' Hawk's song "I Wonder What Bird Was in the Nest"³¹⁷ seems to pick up where "A Nest" leaves off, with baby birds chirping in their nest waiting for food.

I wonder what bird lived in the nest

I think it was a blue jay

It flew away to get food for its babies

And the babies took a nap

Mama came with fish in her beak

They all took a rest in the nest

³¹⁶ https://drive.google.com/file/d/12QZ24NBOflZ_naGPx-Y6-rTm4wevuVYg/view?usp=sharing.

³¹⁷ These lyrics were never set to music or recorded.

Though they are both observational, it seems that neither song takes place in Wildwood Forest, since the class noticed no nesting birds during my fieldwork, and there was no water nearby for fishing. Both songs were written in the middle of the songwriting unit, as students were starting to get a feel for lyric writing and looking for more expansive subject matter. Of all the songs written, “The Nest” sounds most like the types of simple nature-focused songs that Lee taught the students at story time. It is simple to sing but also points out little nuances in nest-construction material, inspiring the listener to keep a closer eye and ear for birds building nests to see how they build them, and where they get their materials from.

Adventure Songs

Airy and Ramden spent a great deal of outdoor time running circles through Wildwood Forest with their little wheelbarrows (the aforementioned Rambulance) yelling and playing imaginary games that featured variations on good guys and bad guys, or some sort of animal theme. It is therefore not surprising that the two song ideas Airy contributed, “[The Orca and the Seal](#)”³¹⁸ and “The Seal and the Shark Went for a Walk,” are both about walking adventures. The lyrics for the former, which were turned into a song, are:

The seal went for a walk

The orca came along

They went back home

They were all together in different homes

³¹⁸ https://drive.google.com/file/d/12rUj_tVqZ_0rzOTidEP09HHFeTfJfgya/view?usp=sharing.

Two different homes of the same

Airy is not a particularly talkative child (and as you can hear from the performance, he plays a kalimba or thumb piano instead of singing along) and did not say anything about the meaning of his song. Having witnessed the friendship and forest adventures of Airy and Ramden in my fieldwork, I always imagine the orca and the seal as metaphors for these two best pals enjoying each other's company each day in Wildwood Forest and then feeling a pang of sadness and loneliness as they go back to their separate family homes each evening. Ramden, the talker of the pair, always had plenty to say but was a reluctant songwriter (he was often too busy with his rough and tumble play to sit and dictate song lyrics). His song book includes just three songs, including "Wheelbarrow Song," an homage to his favorite activity:

I love wheelbarrows

I love it

Drive it around

I can run to it very fast

Ruh, run, ruh, run!

Every time I get a turn

"Wheelbarrow Song" was never set to music, but as a poem it captures the visceral glee of banging through the forest with a wheelbarrow through repetition, and the revving of the words in the penultimate line.

Rockin' Hawk's animal songs also included walking or movement themes, and one about a chipmunk. With its onomatopoeia and classic storybook beginning, it utilizes

elements of the previous two songs, and the repetition illustrates the frenzied and constant movement of chipmunks in and through Wildwood Forest.

Once upon a time there was a chipmunk

The chipmunk went for a walk

Then the chipmunk had lunch at a hot dog stand

Chip, chip, chip, chip, chip, chip, chippy

Chip, chip, chip, chip, chip, chip, chippy

Pat Etta and Carly focused their movement songs on travel adventures, both real and imaginary. Pat Etta, who was always talking about traveling to Northampton when we were imagining that the playground swings were airplanes, penned the straightforward “I Love Northampton,” another set of lyrics left on the cutting room floor:

Northampton is a pretty place

You can eat ice cream there

I went there for my birthday

I love Northampton

Another one of her songs, “[A Moth Flies on an Adventure on a Leaf](https://drive.google.com/file/d/1373naWJqZZZlITYB0BIGtZ48swSbIqTQ/view?usp=sharing)”³¹⁹ was one of the last songs that she wrote, and the last song that we recorded during the week when we set lyrics to music. The song evokes images reminiscent of the opening pages of the Eric Carle book, *The Hungry Caterpillar*, which was popular earlier in the year. Pat Etta and I agreed to try and add some mystery and intrigue into the chords to meet the adventurous nature of the song. Pat Etta was one of the students most interested in playing guitar, and she often grabbed it away from me in moments when it was not being played. In the

³¹⁹ <https://drive.google.com/file/d/1373naWJqZZZlITYB0BIGtZ48swSbIqTQ/view?usp=sharing>.

recording, Pat Etta is blabbing away melodically in the background instead of singing the lyrics, likely a reaction to being told that I would play the guitar on the song instead of her (though it is Pat Etta who runs her fingers along the strings to play the last chord). As in other movement-oriented songs, repetition seems to symbolize movement:

He flies all day, and he flies all night

He victory dances in the moonlight

He flies all day and then it's done

A moth flies on an adventure on a leaf

Moth, moth, moth, moth, moth, moth, moth

Flap, flap, flap, flap, flap, flap, flap

Moth, moth, moth, moth, moth, moth, moth

A moth flies on an adventure on a leaf

This mix of reality and fantasy shows up in some of Carly's songs as well, most prominently in "The Day at Space," a song that was never set to music.

They went up to space

They climbed a tree in the stars

They ate watermelon

And went to a crayon show

For me "The Day at Space" encapsulates the unique nature of many of Rockin' Rebeccas's songs for the ways in which it sets seemingly normal everyday kid activities (eating watermelon, climbing trees, and drawing with crayons) into fantastical situations. As a researcher listening to their imaginative play and working on these songs, I was often confused about whether these songs were derived from real experiences, their

imaginings, or some combination of the two. We adults have more established ideas about what is ‘real’ and what is ‘imagined’ but those lines are blurry for children, and their songs are emblematic of that exploration of what we adults believe is a concrete line between reality and fantasy. I came to think of this easy jump between reality and fantasy as a sort of code-switching that slips not between two languages and dialects, but between experience and imagination.

Animating Matter and Flora

This swerve between the known and the unknown, reality and fantasy, is a key feature in another broad thematic area of songs where students use song to animate geological features and plants. These songs invite creative interpretation, asking the listener to envision themselves as a rainbow, a star, a crocus, or a piece of wood, and the feelings that these different bodies might invoke. The adults in the classroom were attracted to these songs as symbols of a type of freewheeling creativity, full of wonder, that characterizes youthful imagination. If Rockin’ Rebeccas had a star songwriter, it was most likely Rainbow, who at age four was already studying guitar and came from a family of music lovers.³²⁰ Rainbow’s song “Stars Can Die” was so enchanting that it was set to music by two of the guest songwriters, with a [Neil Young version](#)³²¹ and a [pop version](#).³²²

Stars can die, and stars can float away

And they can come to your house

³²⁰ Prior to my fieldwork, the teachers told me that Rainbow announced she had a new friend named Ace, who they thought was an imaginary friend. When they asked Rainbow’s parents, Ace turned out to be Ace Frehley, guitarist for the band KISS, who she was able to meet backstage at one of his shows.

³²¹ <https://drive.google.com/file/d/1CPA793eu4MS68kGLYsS2J9iZ9J0m-Pdf/view?usp=sharing>.

³²² <https://drive.google.com/file/d/18LrTm2U7OyAnapmsKWOSUwePbvhh1gHg/view?usp=sharing>.

And you can make a wish

I wish for [wings]

As we rehearsed this one and students learned the words and melody, its popularity grew because a different student would get to make a wish for something at the end of the song. This sort of participatory singing, as I showed in chapter 4, is very typical of the types of songs that the class had been singing throughout the year, with each student getting a chance to put their mark on the song.

Another class megahit was Ramden's "[Carly's Bath](#)"³²³ which we all initially thought was about a baby sibling of one of the students but turned out to be about a piece of cordwood that Ramden had decorated with a face and liked to throw in the mud while playing in Wildwood Forest.³²⁴

Carly's taking a dirt bath

Look at her!

She's taking a brownie bath

Look at Carly now

Put the water on, put the water on, put the water on

And she's good

Put the water on, put the water on, put the water on

And she's good

The recording I have linked here, which Lee made just after the song was written, is a little ramshackle. After weeks of rehearsals, the song had morphed into a more

³²³ <https://drive.google.com/file/d/1qlFUPHFFILMIj7RA4Ro-mcRRrrzEfBv-/view?usp=sharing>.

³²⁴ It seems likely that the student known as Carly in this dissertation took her name from this song. Students chose their pseudonyms only at the end of the school year.

streamlined rocker, and Ramden was always very proud when we played this song as a group. It seemed to be a symbol of his goofy, physical nature, and his willingness to get dirty and have fun doing it. Mud songs were also very popular amongst the boys. Though it does not animate the inanimate in quite the same way, another song by Diamond called “Splash!” mines similar territory, describing a mud pit as slimy and goeey and warning the listener that Godzilla might be hiding inside. In both there is an element of magical thinking about mud, as if the sensory explorations that these kids have been enjoying all spring can be a portal to another world or reality. There is a sense that the uniqueness of mud—its feeling, its smell, the goopy sounds it produces when you play in it, perhaps even the prohibition that many adults set about playing in it—is a vehicle for transporting children to exciting new places.

In Jewel’s song “The Flower,” a crocus unfortunately does not find the same pleasure as Carly the cord wood. Jewel wrote just two songs, and they were both brilliant poems that paired a keen sense of observation about the world around her with a deeper interest in understanding what it might feel like to be the subject of one’s own narrative.

Flowers bloom, a person came

That person took one flower

They put the flower in a cup

Then put it in the soil

It was a crocus

That smelled like cherries

It thinks about winter

Because it wants to go sledding

But it can't steer

Because it doesn't have hands

The crocus is a popular perennial bulb flower in Vermont, one of the first to pop through the frozen ground and snow in the early spring. In the last several years, due to climate change, the shoulder seasons of fall and spring have become much shorter in the part of Vermont where this study took place, with more rapid changes between winter and summer. Flowers like the crocus are blooming earlier than usual but are tough enough to endure the random spring snows and extreme temperature fluctuations that have become typical of spring (80-degree weather in late March, and the historically typical lingering frosts in late May and early June). “The Flower” makes perfect sense in this scenario, and I imagine a crocus being picked and placed indoors, thrust into this world of humans, and then wondering what it would be like to enjoy sledding on a spring snow day like a human child. It is an acknowledgement of the ways in which the crocus has been accepted into the human world but only marginally, and as a decoration, not as a full participant or appreciator of the joys human play.

Carly's “[The Day of the Rainbow Talking](#)”³²⁵ has a brighter message of a rainbow that brings peace to two traditional foes, a mouse and an owl, through its positive demeanor.

A rainbow came down the lane one day

She went to Mouse's house

She plays with Mouse

Then she went to Owl's house

³²⁵ https://drive.google.com/file/d/1_srCr9mnw_yhj2WpoVZZKM2J0l_9jYFD/view?usp=sharing.

Everyone is happy! (repeat x3)

Instead of a simple weather feature, Rainbow is recast as a benevolent being that brings intentional joy to creatures (which is not far off from the truth for humans). While we are left wondering whether the rainbow talks in some form of speech that these animals can understand, or is simply communicating through its image and movement, the result is a peacefulness that everyone is entitled to enjoy and appreciate. The teachers and students were inspired by Carly's improvisatory approach to singing "Everyone is happy!" in the initial recording, and in our rehearsals and performance of the song, we encouraged everyone to sing and yell, "Everyone is happy!" as many times as they liked, and at random times during the chorus of the song. I feel Carly's simple joy whenever I listen to "The Day of the Rainbow Talking," and it quickly became a student and teacher favorite.

The Aura: Rituals of Place, Time, and Song

In chapter 4 I described a world of sounds, songs, games, movement, and imaginary play as a sonic placemaking composed by teachers and students with the more-than-human critters of Wildwood Forest within the built and natural environments of the school grounds. While many of the songs that teachers in Wildwood Forest classroom integrate into the class routine were inspired by the seasons, the types of movements and melodies that students were drawn to, and the drive to build an educational community through sound, the songs themselves were in many ways what Walter Benjamin might call reproductions, "lacking in one element: its presence in time and space, its unique existence at the place where it happens to be."³²⁶ Songwriting is a practice of melding

³²⁶ Benjamin, "The Work of Art in the Age of Mechanical Reproduction," section II.

words, music, and ideas in the moment, and it is by necessity a liminal event: there will never be the right words to truly capture the feelings that we want to evoke. In songwriting, the rhythm of the words we want to use to convey an idea may be inconsistent with the melody we hear in our hearts. Oftentimes the melody that we hear in our hearts exceeds our musical audition and technique. To write songs is therefore to always be engaged in a struggle, to wrestle with the endless possibilities that the building blocks of a song present to us, and to know that a song will always be an extension of our emotions and lived experiences as an expression of wonder and possibility. This process is not unique to songwriting. It is a struggle that artists in all mediums happily dedicate their lives to, because to be in the flow of creativity is to be most wholly and mindfully hovering in the present moment for those with an artistic soul.

In comparison to the reproductions of songs, storybooks, pedagogical activities, and narratives that I described in chapter 4, Rockin' Rebeccas's songs were rehearsed and performed in the unique space and time within which they were created. In this way, the songs exist in what Benjamin calls a "ritual function" for a piece of art, wherein "the unique value of the "authentic" work of art has its basis in ritual, the location of its original use value."³²⁷ According to Merriam-Webster dictionary, the primary meaning of the word authentic is "not false or imitation: real, actual," but it is the second definition that gets to the heart of Benjamin's point, where authentic is defined as "true to one's own personality, spirit, or character."³²⁸ An authentic work of art is therefore a song that is true to spirit, place, and practice. In this day and age, when so much artwork is

³²⁷ Walter Benjamin, "The Work of Art in the Age of Mechanical Reproduction," section IV.

³²⁸ *Merriam-Webster.com Dictionary*, s.v. "authentic," accessed November 6, 2025, <https://www.merriam-webster.com/dictionary/authentic>.

designed for endless reproduction and the artist must constantly engage with the modern reverb tank of media amplification, I want to add to Benjamin's definition and argue that the truly authentic work of art is not merely true to spirit, place, and practice, but is in some way comfortable with its own self-destruction outside its place of origin, or its authentic rituals. In this era of media reproduction, to design and create a piece of music or sound art that is ephemeral or place-based has become a central act of disrupting the media landscape, a challenge in an era of bland Spotify streaming that has a never-ending and placeless river of sounds available at the touch of a button. Rockin' Rebeccas's songs stand as a bulwark against these tendencies, a set of amateur³²⁹ songs that were written and recorded only to enhance the ritual of time spent in Wildwood Forest, so that we (students, teachers, musicians, and students' families) might engage in the act of learning about place and community while participating in the ritual of performance and placemaking through song.

What existing rituals did these songs join and influence, what new rituals did they inspire? While the full impact of that might not be fully known in the scope of this project, there was an immediate impact in how students and teachers began to react when they encountered the muses of their songs. Inchworms, spiders, small black beetles, and earthworms were perhaps the most ubiquitous animals that students encountered in the forest, and for many Vermonters their presence becomes an afterthought. But a song celebrating these little creatures provided an opportunity to sing an introduction during each encounter (or attempted encounter ... critters are not always so forthright with

³²⁹ My use of the word amateur here refers not to the idea of unprofessionalism, but rather to the idea of amateur as an act of pursuing something out of love rather than for livelihood.

presenting themselves). After Diamond wrote his song “Inchy,” it became an invitation to sing “How did you get on me?!” when an inchworm showed up on students’ clothing outside in Wildwood Forest or hitched a ride back in the classroom. Diamond’s song captured the wonder of these little creatures, their odd lilted gait, and their ability to peacefully show up unannounced and unnoticed on clothing. The song became ritualized, a way to join in Diamond’s wonder, to remove the worm peacefully instead of forcefully while acknowledging the inchworm and its strange journeys. Unlike the string of teachable moments that Rebecca Mouse invoked, the inchworms did not inspire scientific inquiry or additional artmaking. It was simply a moment to stop and greet the inchworm before sending it on its way, and the song created the conditions for a mindful interspecies moment.

Earthworms, spiders, and black beetles often inspired similar reactions from the students. If a student was looking for black beetles or bugs, with the teachers’ encouragement they might call out the first line of Rainbow’s song, singing “Black Beetle, Black Beetle where are you?” And finding one, might drop into Allen Soy Sauce’s mantra of “Beetle, Beetle, Beetle...” There were no explicit teachable moments here, just simple encounters with the creatures that raised the small but ubiquitous important political and ethical question that many humans churn through whenever they encounter an insect that has infiltrated what we adult humans perceive to be private human space (i.e. our clothes, our classroom, our home). Within early childhood education situations, Nxumalo thinks about these actions as “worldings...emergent forms of human and more-than-human relating that are grounded in the details of everyday life yet are filled with

frictions, tensions, and ethical potentials.”³³⁰ In early childhood education settings, Nxumalo argues that these worlding moments provide a foundation for young students to experientially engage with our responsibilities to more-than-human life, a way to “trouble human-non-human, meaning-matter, and nature-culture divisions” and an opening for teachers and research-creators to “complicate and decolonize our pedagogical engagements.”³³¹ This collection of in situ songs were living entanglements with the forest space, and in their performance they offered a simple and fun way of ritualizing a pedagogy of interspecies acknowledgement in a moment embedded with political friction and teachability. The songs slipped into the litany of leitmotifs, rhymes, and songs that Lee and the other teachers used to help students learn and draw numbers, or for class management. Rockin’ Rebeccas’s creations were an opportunity for student-critter multispecies interactions to co-design the always emerging sonic dialect of the classroom, celebrating and ritualizing the wonder, pitfalls, and possibility inherent in even the smallest moments. And though many of the creatures were unlistenable in the aural sense, these new leitmotifs created space for the sort of mindful embodied listening for silences, sounds, and internal emotions, detailed in the last chapter, which sets up the preconditions for perspective-taking in the forest, what Gershon calls “deep listening to the entangled rhizomes that are poetics in relation.”³³²

³³⁰ Nxumalo, “Stories for Living on a Damaged Planet,” 149.

³³¹ Nxumalo, “Stories for Living on a Damaged Planet,” 153.

³³² Walter S. Gershon, “Hear Me Roar: Sound Feminisms and Qualitative Methodologies,” in *Transdisciplinary Feminist Research: Innovations in Theory, Method and Practice*, ed. Carol Taylor, Jasmine Ulmer, and Christina Hughes (Routledge, 2020), 141.

Speculative Fabulation

Rockin' Rebeccas's songs ritualized encounters and practices of interspecies acknowledgement in song, but they also explored and illustrated a rich imaginative sphere. Songs like "The Day at Space" and "The Flower" animated matter with feelings and emotions and proposed fantastical narratives and scenarios, obscuring our sense of reality. Donna Haraway has encouraged the challenging of this line between scientific inquiry, technology, and artistic creation, calling this creative, environmentally-minded work "speculative fabulation," defined as "a mode of attention, a theory of history, and a practice of worlding."³³³ Worlding for Haraway is a practice of inviting creativity into the act of interspecies comingling to interrogate the political imbalances inherent in life in the Anthropocene. Haraway's definition of speculative fabulation is a shaky and vibrating idea itself, and she refers to the practice variously as SF, "science fiction, speculative feminism, science fantasy, speculative fabulation, science fact, and also, string figures."³³⁴ Haraway has been a practitioner of SF herself through her science fiction writing, as well as a champion of artists who explore similar terrain.³³⁵ The idea of speculative fabulation has also been mobilized in a variety of educational settings, from storytelling in environmental education and multispecies ethnography,³³⁶³³⁷ to creative

³³³ Donna Haraway, *Staying with the Trouble*, 213.

³³⁴ Haraway, "Staying with the Trouble," 10.

³³⁵ For a sculptural example, see Donna Haraway, "Speculative Fabulations for Technoculture's Generations: Taking Care of Unexpected Country," *Australian Humanities Review* 50 (2011). <https://australianhumanitiesreview.org/2011/05/01/speculative-fabulations-for-technocultures-generations-taking-care-of-unexpected-country/>.

³³⁶ Hohti and Tammi, "Composting Storytelling," 595-606.

³³⁷ Tuure Tammi, Riikka Hohti, and Maria Saari, "Imagination Switch – Friction and Thick Time in Speculative Worldmaking," *Educational Philosophy and Theory* 56, no. 14 (2024): 1414-1427. <https://doi.org/10.1080/00131857.2024.2409733>.

walking/writing projects,³³⁸ to writing as a form of interspecies articulation.³³⁹ Unlike these projects, where the pedagogical or research design was informed by speculative fabulation at the outset, Rockin’ Rebeccas were provided no framework or encouragement towards speculative fabulation. Instead, it was an organic extension of the already imaginative dramatic play that filled their days in Wildwood Forest. Truman, who researched speculative fabulation with secondary students, writes that “While rooted in everyday storytelling practices, speculative fabulation defamiliarizes, queers perception, and disrupts habitual ways of knowing.”³⁴⁰ For these four- and five-year-olds however, the act of speculative fabulation was less about disruption and more about the continuation, encouragement, and sonic expression of narratives and lines of inquiry that were set in motion much earlier in the year.

It was Rebecca Mouse more than any other critter who inspired Rockin’ Rebeccas’s turn towards speculative fabulation. Drawn to Wildwood Forest by its mix of shelter (school sheds) and the endless replenishments of snack crumbs, the clever Rebecca Mouses and their chipmunk kin have made themselves a fine home at the school grounds, becoming a true “companion species”³⁴¹ to the students and teachers. A central tenet of multispecies work is that species do not pre-exist their relations with each other, an idea that challenges discourses of human mastery and exceptionalism. Haraway writes that “Ontologically heterogeneous partners become who and what they are in relational

³³⁸ Sarah E. Truman, “SF! Haraway’s Situated Feminisms and Speculative Fabulations in English Class,” *Studies in Philosophy and Education* 38 (2019): 31-42. <https://doi.org/10.1007/s11217-018-9632-5>.

³³⁹ Pauliina Rautio, “Being Nature: Interspecies Articulation as a Species-specific Practice of Relating to Environment,” *Environmental Education Research* 19, no. 4 (2012): 445-457. <https://doi.org/10.1080/13504622.2012.700698>.

³⁴⁰ Sarah E. Truman, “SF!,” 31.

³⁴¹ Haraway, *Staying with the Trouble*, 13.

material-semiotic worlding. Natures, cultures, subjects, and objects do not pre-exist their intertwined worldings.”³⁴² The same could be said of educational settings, which in forest classrooms is never truly a creation of human educational design, but always co-constructed in place. The Wildwood Forest teachers, drawing on their experiences of child fascination with rodents and small critters, were quick to collaborate with Rebecca on their educational journeys through the school year through a variety of science and art projects, and eventually the songwriting unit. It was not always clean and beautiful, as the episode about mouse eviction showed in the previous chapter, in line with what Haraway calls the “the more modest possibilities of partial recuperation and getting on together.”³⁴³ Rebecca Mouse was simply a presence in the classroom, not always noticed, sensed, or fully welcome, but a companion and neighbor whose life occasionally intersected with the students, as well as an educational stakeholder.³⁴⁴ The process of naming the band Rockin’ Rebeccas was symbolic of this relationship: it was both an obvious choice and one that was not readily accepted when first mentioned. To be companion species is not always perfectly convenient, but to the teachers’ credit, they mobilized this moment with all its bacteria-laden complexity and risk.

Mice are social creatures with routines and habits.³⁴⁵ After cohabitating with mice all year, it was a natural step for Rockin’ Rebeccas to put their wonders about mice into song. If Rebecca Mouse was a musician, what type of music would she play, and what

³⁴² Haraway, *Staying with the Trouble*, 12-13.

³⁴³ Haraway, *Staying with the Trouble*, 10.

³⁴⁴ For an expansive take on this theme, see Maria Helena Saari, “Animals as Stakeholders in Education: Towards an Educational Reform for Interspecies Sustainability” (PhD diss., University of Oulu, 2021), <https://oulurepo.oulu.fi/bitstream/handle/10024/36657/isbn978-952-62-3151-8.pdf?sequence=1>.

³⁴⁵ Eva Meijer, “Learning to See Mice,” *Humanimalia* 13, no.1 (2022): 211. <https://doi.org/10.52537/humanimalia.11520>.

instrument? Songwriting is a vulnerable process, and Rockin' Rebeccas, like most beginning songwriters, were hesitant to get started. The teachers and I encouraged them to write about what they knew, and Rebecca Mouse quickly became an obvious starting point. In retrospect it makes perfect sense that students' first song about Rebecca Mouse would feature her as a musician, but it was not predestined in any way. Except that for students it clearly *was* obvious. Rebecca Mouse was a companion species, a bandmate, a muse, and in the artistic act of learning to write songs, she unlocked the speculative fabulation, the entanglement of being, knowing, creating, and wondering, that unleashed the whole project. We teachers and musicians led the students to the gate of creativity, but it was Rebecca Mouse who opened the door and staged a comfortable space for creative abstraction. Haraway's theory of speculative fabulation allows us humans to follow the rhizomes of multispecies entanglement, and the possibilities inherent in companion species cohabitation. But the collaboration between Rockin' Rebeccas and Rebecca Mouse shows that creating with companion species is also an essential tool for unlocking our own human creativity and imagination. In this companion species collaboration, Rockin' Rebeccas and Rebecca Mouse each brought something unique to contribute to this songwriting project. Rebecca Mouse was just far enough outside the sphere of human culture that it put students at ease to write songs through and about her. She gave them a perspective outside of their own that was a comfortable and inspiring place from which to compose.

In Wildwood Forest, song, story, dance, and sound-game routines provide a sense of haptic comfort for students, and in chapter 4 I theorized how sound, despite the content of the lyrics, is a form of touch for these young students. Building on that idea, in this

songwriting unit I hear echoes of that craving for interspecies and cross-matter connection through the lyrical content of the songs. “Everyone is Happy” imagines a rainbow as not simply a mystical meteorological phenomenon, but a benevolent friend. “Carly’s Bath” animates a simple piece of wood into a friend to keep you company when there are no human or animal companions around. “The Flower” explores the idea that plants have feelings, that they notice climatic disruptions (they really do), and that they yearn for the simple pleasures of play. “Stars Can Die” draws a connection between humans and outer space, helping us to feel a little less small and lonely as we float through space and time on this ball of matter we call Earth.³⁴⁶ In all these songs I hear students configuring themselves and humans as less alone and separated from the animals and matter around them, and they position vast astronomical and meteorological events as “situated deities and spirits,” while others make kin in unexpected ways.³⁴⁷ Haraway writes that “making kin involves all sorts of categories of players—including gods, technologies, critters, expected and unexpected “relatives” and more—and diverse processes which taken together make the characterization of “kinship” as relations formed solely by genealogical descent and reproduction, or alliance and lineage, unsustainable.”³⁴⁸ In this way, the songs worked both as a mobilization of how humanity is co-created with the everything-ness around us, and a reminder to keep wonder alive as we notice and celebrate these “unexpected relatives.”

³⁴⁶ Dear Sun Ra, we are still listening.

³⁴⁷ Haraway, *Staying with the Trouble*, 216.

³⁴⁸ Haraway, *Staying with the Trouble*, 216.

Sonic Fables ∞ The Arts of Wondering

Inspired by Rockin’ Rebeccas’s songs and imaginative sonic play, and as a playful expansion of Haraway’s growing list, I propose to call these sung speculative fabulations *sonic fables*. Sonic fables blend the speculative and artistic worlding of artistic creation with play-based learning, and through the ephemeral resonance and ritual of sound and song creates communities of companionship and rituals of wondering and relationality. In a time of rapid environmental weirding, we need speculative fabulation of all kinds, and my argument here is not for one kind of imaginative work over another, but rather an acknowledgement of how various media affects us and how it makes us work and think differently. Tschakert argues that different types of interspecies encounters—visual, corporeal, political, and ethical—are needed to “enact more-than-human solidarity (togetherness and care) and multispecies justice,”³⁴⁹ and in this vein I highlight the possibilities inherent in sonic fables as a corporeal form of embodied multispecies sonic artmaking. Much of this is due to the unique way that sound affects us in/through our environment as a phenomenon. Gershon writes that “sonic relations are always already in a state of omni-directional expression and reception. This means that sonic inquiries are always multiple.”³⁵⁰ It is that already quivering multiplicity of acoustic resonance that foregrounds what sound is and can do as sonic fable, starting with imaginative soundtracking all the way through rituals of song.

³⁴⁹ Petra Tschakert, “More-than-human Solidarity and Multispecies Justice in the Climate Crisis,” *Environmental Politics* 31, no. 2 (2022): 279. <https://doi.org/10.1080/09644016.2020.1853448>.

³⁵⁰ Walter S. Gershon, “Reverberations and Reverb: Sound Possibilities for Narrative, Creativity, and Critique,” *Qualitative Inquiry* (2018): 5. <https://doi.org/10.1177/1077800418807254>.

As I have shown, sounding was an intrinsic part of imaginative play for Rockin' Rebeccas's from the very start of my fieldwork. A wide array of imaginative voice and body sounds, including yelling, soundtracking, voice acting, animal and machine imitations, singing, wordless chants, and mouth sounds were an intrinsic part of Rockin' Rebeccas's play, and those sounds made play feel more real, intense, and meaningful. This sound-as-play-as-sound occurred outside during play-based moments as well as inside during loud and quiet moments, together and alone, even during the rest time I described at the end of chapter 4, when students would retreat to a corner by themselves with figures and toys and immediately start murmuring and talking as they acted out play between toys. In collective moments, sound was a resonance of communal play and an enactment of creative collaboration. In quiet moments it was an animation of internal narratives and a performance of students' struggle to be alone with themselves. In both cases, sound inspired imagination, and it made them feel part of a community, and participants in the world around them. For Rockin' Rebeccas, these soundings were the building blocks, the notes and motifs that formed the melodies of their sonic fables. Before we began songwriting, there was already the idea that making sound is deeply tied to the imaginative act and that sound makes dramatic play real.

The ways in which the uniqueness of the phenomenon of sound is a portal to the fantastic and im/possible futures is central to Voegelin's work on sound and possibility. She writes, "Sound is different from literary fiction in that it does not propose something but *does* something. It is neither a representation of an actual event nor the construction of a possible event, but *is* an event in all its possibilities."³⁵¹ Voegelin's idea of sonic

³⁵¹ Voegelin, *Sonic Possible Worlds*, 32.

possibility is also embedded in constantly vibrating relationships to place as framing agents in what it means to be sonically creative, whether listening or composing. The phenomenon of sound, of listening differently, of sounded perspective-taking and creating sonic fables in community is meant to be an act of mindfulness in space and time. She writes, “The universe I want to draw on is not centered around and constructed from one world only, but is constituted of a plurality of actual, possible, and impossible sonic worlds that we can all inhabit in listening and through whose plurality music loses its hegemony and discipline and the landscape gains its dimensions.”³⁵² Sonic fables are grounded in rituals of deep listening, proposing a web of ecological connections possible and yet-to-be-conceived, while always already in the moment of song birthing new possibilities intrinsic to the reverberations of song and sound.

This line of theory is both ridiculous and true, impossible and actual, for in the end these sonic fables are just silly songs and stories written by four- and five-year-olds writing nearly thoughtlessly in the moment. And at the same time, as Nxumalo and Cedillo show, storying place is an age-appropriate way to seed larger discussions about the politics of place, indigeneity, and cosmology.³⁵³ Additionally, I believe that the brilliance of the songs and their community amplification concretized a feeling amongst community, family, and friends. Children and their zany ideas are one of the greatest sources of joy we know as humans, and for many of us educators, hope for a more relational, ethical, and just future relies on adults’ and educators’ ability to foster this creativity. In the previous chapter, I argued that the arts of wondering are about staying in

³⁵² Voegelin, *Sonic Possible Worlds*, 14.

³⁵³ Nxumalo and Cedillo, “Decolonizing Place,” 103.

a suspended state of curiosity about what is happening, about going deeper while resisting certainty. Rockin' Rebeccas practiced their arts of wondering through questions, through art projects, through letting Rebecca Mouse and the other critters in as educational stakeholders and even teachers. Sonic fabling, as I describe it here, is the ritual singing of the arts of wondering, a practice of togetherness, a dream of relational possibilities that makes relationality real through song. Music brings us humans so fully into the flow state, animating time and place in ineffable ways, and connects us to each other through the vibrations of sound. It is at once a ubiquitous feature of life and at the same time an incomprehensible magic trick, an enticement to listen differently, a tunnel into another dimension, and a way to communicate with the cosmos.

CHAPTER 7 ∞ CONCLUSION

In this dissertation I have explored an expansive approach to listening and composition in place-based educational settings. As I have shown, the phenomenon of sound is foundational to human understandings of place, no matter how we listen, and likewise musical composition can be a wonderful tool for producing and reproducing senses of place. While my approach may seem novel to some, the research and creative projects here fit within the growing fields of sound studies and the environmental humanities. As of this writing, a large-scale three-year research-creation project titled *Multispecies Symphony*,³⁵⁴ which mirrors many of the same qualitative sound methods, research-creation practices, and multispecies lines of inquiry is set to begin in Finland in early 2026. There are certainly many other collaborations between musicians and students in forest-based settings that are happening outside of research paradigms as well. Even beyond music, I hope this work shows how creative artistic practices in other mediums can provoke interspecies entanglements and build rituals of encounter, attunement, and engagement in place-based educational settings. They can also be great fun.

In the earliest chapters of this work, I tried to stitch the field of sound studies into decolonial and multispecies theory. One thread I draw between these fields is the ways in which community is built across difference, species, time, and place. Musicmaking is one of the most ancient human forms of being together in place, and while most Vermont schools have music programs (though even these are under threat), containing music as a

³⁵⁴ See <https://www oulu.fi/en/research-groups/animate-becoming-and-being-human-other-animals> for more information.

discipline to one class or space (the music room) is an unnecessary limitation. Making music together is a way of being attentive to the ways in which community is built through sound, and schools would do well to engage in this collaborative work not just in the music classroom, but during units on literacy, science, and more. In chapter 4, I described the rich sonic world of a pre-kindergarten classroom, showing how teachers compose sonic rituals in collaboration with students, the built environment, the seasons, and the forest classroom. I also hinted at the fragile nature of this “sonic dialect,”³⁵⁵ and the pressures that educational institutions are placing on teachers who use sound and song to appease a wide range of educational stakeholders, from students to parents to administrators to state education agencies, as well as forest critters. As teachers have mentioned, this sounded world is common in early education, but it tapers out in the higher grades. How will students adjust to an educational future that is less play- and song-based? How has this sounded educational world set students up for success within an outcomes-based system that prioritizes, literacy, numeracy, and ocular ways of learning? What would it sound like to have such a rich educational world of sonic ritual in 6th grade, 9th grade, or beyond? While teachers in Wildwood Forest feel powerless to enact change in a system that still prioritizes test scores over social-emotional learning, they feel compelled to help build a foundation for students to achieve statewide standards on some of these learning outcomes while remaining hopeful that the types of play-based and arts-based education I have written about here can both meet those state standards *and* achieve more elevated goals of teaching about environmental compassion. Gershon and Horin have already showed that songwriting and science can go hand in hand from

³⁵⁵ Matless, “Sonic Geography,” 750.

early childhood all the way through high school,³⁵⁶ and I hope this research project provides another example of the work they and others have been doing to integrate music, listening, and arts into a wide range of disciplines in primary and secondary schools.

What skills, tools, and frames will these students carry with them from this pre-kindergarten year that will allow them to listen differently and stay with critical wonder? What do we learn when we attempt to momentarily take the perspective of other humans and species who are culturally and socially different or may be victims of the political imbalances of the Anthropocene? These questions arise most prominently in chapter 5, and they are foundational to a place-based education that prioritizes compassion, slow learning, and creativity. In that chapter, I provided rich details for the ethical encounters between the humans, trees, rocks, mice, and critters in Wildwood Forest. I am sure that skilled place-based educators in other places and environments would have managed those encounters in a myriad of different ways, and more sustained fieldwork at this site (and other sites) would have yielded a richer data set of narratives, practices, and engagements. Despite these limitations, the examples here show how non-extractive engagement and perspective-taking is foundational to place-based education, which prioritizes an education of the senses through rich, prolonged, and guided experiences in place. This dissertation shows the ways in which listening differently can be a key to unlocking that attentiveness which slowly reveals the complex ecologies that make up our multispecies communities. After this year of play-based, place-based, song-based

³⁵⁶ Gershon and Ben-Horin, "Deepening Inquiry," 28-30.

learning, I wonder how students will mobilize those practices of attentiveness and attunement both in and out of school.

At the same time, I feel a pang of worry that these students may be missing out on opportunities to go ever deeper into an imaginative, experiential, sensory education of the place where they live. Imagine what they would create if they carried out creative projects like this every year of primary school! Yet another great disadvantage of outcomes-based learning is that it encourages educators to treat educational experience, critters, and matter, as a checklist of objective points of knowledge and skills, rather than a place of unexpected encounter or a site for creative collaboration with a diverse community of beings and matter. Improvisation, deep listening, and responsiveness to unexpected moments are key tools of the place-based educator, and they are pre-requisites for staying with wonder, curiosity, and critical thinking in a forest-based classroom. I remain curious about how listening and responding in improvisatory ways—to the seasons, the weather, the political events of the day, the multispecies ecologies of place—might yield new ways of teaching and learning in a variety of disciplines. How do we mobilize wonder as a learning outcome?

The idea of writing songs with four- and five-year-olds in a school forest is what drew me to this research site, and it did not disappoint. The scene that I detail in chapter 7 was truly shambolic, sometimes wonderfully so and other times nerve-wracking, though the nerves were entirely my own. In retrospect, it seems risky, borderline insane, to have designed a research project that depended on finding a way to turn ten young children into a band (though if it was not already obvious, I want to explicitly say that these three extraordinary teachers deserve most of the credit). As a musical improviser, I have found

that we musicians reach the deepest flow states and richest connections when we take big chances, and I believe that same calculus of risk to reward exists in qualitative research. In that chapter, I showed how songwriting can create rituals of engagement with critters and place, build community through song and dance, and inspire us to rethink what is possible in the world we inhabit, and the future we would like to see. When we bring these ritual encounters of place into contact with the fantastically wild futurity of children's dreams and dramatic play, we learn that no environmental catastrophe is predestined. Sometimes I wonder if us adults (parents, teachers, researcher) learned more from the students than they learned from us during this songwriting unit, because these young students live so fully in the moment and their memories are still so fluid. I saw Allen Soy Sauce on a playground less than four months after our songwriting activity had ended, and he did not remember me. (Lee tells me this is quite common; some students do not remember her after a single summer away from school). But as soon as I started singing "Beetle, beetle, beetle, beetle..." his eyes lit up and his smile beamed. I am sure the songs we all wrote together are floating somewhere in their bodies and auditory imaginations, and that some sound, song, experience, or emotion will trigger a replay when the time is right. I hope it makes them feel as hopeful as I feel right now.

Coda: Arts Night in Wildwood Forest

Listen to this: it is late May 2025, the evening of the annual Arts Night at Rockin' Rebeccas's school. The format is open to interpretation by the various teachers, and families are invited to visit grade-level classrooms, the art room, and the cafeteria to peruse the various artistic creations that students have put together over the course of the year. There will also be a concert band and chorus concert in the school's gymnasium at

the end of the night. For Rockin' Rebeccas, a different ritual is taking place in Wildwood Forest. The forest is warm and fully leafed out by this time so that it feels and sounds like a room of forest once again, with golden threads of light slashing through trees whenever a breeze picks up. Birds are singing and insects are humming and slowly the forest fills up with the band, who is showing their family and siblings all the great little spots where they play. Lee has printed out dozens of lyric books featuring Rockin' Rebeccas's megahits, and the community musicians and I unpack our guitars for one last jam session. Lee introduces the project again and explains that we are going to sing through our favorite songs starting with "Rebecca Mouse's Instrument." Rockin' Rebeccas are shy but proud, and because of the large and loving crowd of about fifty parents, grandparents, friends, and siblings, they show more focus than I have noticed in weeks. Together we teach everyone the little quirks of each song, announce which songs are the dance numbers, and introduce the little parts where we get to ad lib a rhyme or a wish. At one point I catch sight of a grandfather singing his heart out on the line "everyone is happy" during "The Day of the Rainbow Talking." When we get to the song "Carly's Bath," one of the students introduces us to their baby sister, the original Carly, and parades her around while we sing about Carly (the cord wood) taking a bath. In a few years, baby human Carly will be in this class in Wildwood Forest, writing songs of her own in this now annual songwriting project. What will she sing about?

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