Resonance: Collaborative Explorations of the Contemporary Percussionist

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Abstract

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Resonance: Collaborative Explorations of the Contemporary Percussionist

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Resonance investigates recent developments in the field of contemporary percussion music. The five case studies examine how composers, performers, and listeners collaborate. An analysis of their collaborations reveals that recent advances include the reconceptualization of physical space and utilization of virtual space, the arrangement and orchestration of the composer's voice for percussion instruments, and how collaborators can use source material to explore new avenues of performance. The dissertation also features a creative component, a composition for amplified percussion instruments and four-track cassette recorder titled *Resonance, in Three Movements*. Scholars and artists interested in unique approaches to interdisciplinary collaboration involving physical and virtual space, source material, and commissioning will find that these case studies provide unique insights involving new directions in the burgeoning field of percussion studies.

Dedication

For my family, my friends, and my late professor Ted Rounds.

Thank you.

Acknowledgments

I would like to thank a few people for making this dissertation possible. First, my advisor Dr. Garrett Field for his steadfast support throughout my doctoral studies. The diligence you place in your craft and your genuine demeanor are sincerely inspiring. Also, Roger Braun for his guidance and support throughout my graduate studies at Ohio University, especially with the creative component of this dissertation. It has been an honor to study and perform with you. To my committee members, Dr. Vladimir Marchenkov and Dr. Richard Wetzel, thank you for your interest and insight into this project. Our discussions have been truly priceless. I would also like to acknowledge Sean Connors, Josh Quillen, and Aron Sanchez for taking the time to discuss the compositions and sharing their ideas with me. Your insight has been invaluable to this project.

I would also like to acknowledge Randall Taylor and his work in our collaborative project *Resonance, in Three Movements*. Our discussions about music and the creative component of this dissertation have been inspiring. I hope that we can work together on another project in the future. Finally, the creative component of this dissertation would not have been possible without funding from the I. Hollis Parry/Ann Billman Project Development Award at Ohio University. Thank you to the Billman family for your continued patronage of the arts at Ohio University.

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Introduction

This dissertation seeks to examine five case studies involving collaboration in contemporary music. It is supplemented with a creative component, a composition titled *Resonance, in Three Movements* for amplified percussion instruments and four-track cassette recorder (discussed in Chapter 3). The dissertation seeks to enrich musicology and percussion studies, a burgeoning academic discourse that examines scholarly research in different areas of percussion, by focusing on overlooked forms of collaboration, including the reconceptualization of physical space and utilization of virtual space, the arrangement and orchestration of the composer's voice for percussion instruments, and how collaborators can use source material to explore new avenues of performance.

The Oxford Dictionary of Music defines resonance as, (1) "The sympathetic vibration of bodies capable of producing sounds as soon as a pitch similar to that of the body or one of its overtones is heard," and, (2) "The rebound of vibration-waves from a solid structure such as walls of a hall or church."[1] The Cambridge Dictionary describes resonance as a "feeling, thought, memory, etc. that a piece of writing or music makes you have, or the quality in a piece of writing, etc. that makes this happen."[2] The compositions that will be discussed in this dissertation all contain musical elements that make them

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[1] Joyce Kennedy, Michael Kennedy, and Tim Rutherford-Johnson, eds., *Resonance*, 6th ed., The Oxford Dictionary of Music (Oxford University Press, 2013), https://www.oxfordreference.com/view/10.1093/acref/9780199578108.001.0001/acref-9780199578108-e-7530.

[2] "Resonance," in *Cambridge Dictionary* (Cambridge University Press, 2020), https://dictionary.cambridge.org/us/dictionary/english/resonance.

resonant. The unrelenting drums and sirens in *Inuksuit* (2009), the speakers streaming live-audio from remote performance locations in *Auksalaq* (2012), the lush textures of the synthesizer and percussion in *For All Its Fury* (2019), the hocketing chordstick in *Music for Wood and Strings* (2013), and the ethereal textures created by electroacoustic instruments in *Resonance, in Three Movements* (2020).

The spaces in which these performances take place also shape the composition's resonant features. Composer John Luther Adams suggests that "...the Inuksuit of this piece are made only of time and air. Once they have been sounded, they disappear. *Inuksuit* be (sic) a powerful, memorable, but ephemeral experience."[3] The music discussed in this dissertation resonates through the collaboration between composers, performers, and listeners. Space and place are reimagined in the compositions *Inuksuit* and *Auksalaq*. Their sonic landscapes resonate both embodied and disembodied place in performance. Devonté Hynes and Bryce Dessner's artistic voices are facilitated by Third Coast Percussion and Sō Percussion through collaborative orchestration. The compositions resonate through both composers' unique approach to writing for percussion.

This dissertation has two objectives: (1) to examine the extent to which collaboration has shaped facets of space, arrangement/orchestration, and commissioning in percussion music, and (2) to create a new work for percussion that demonstrates the aforementioned shift in composition. As previously mentioned, this dissertation features a creative component, a work titled *Resonance, in Three Movements* (2020) for amplified

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[3] John Luther Adams, *Inuksuit* (Fairbanks, AK: Taiga Press, 2009).

percussion and four-track cassette recorder. This dissertation will have significant application in the areas of both musicology and percussion studies because it highlights new approaches to ethnography involving the commission of a new composition for percussion. I argue that collaboration is an essential force that shapes contemporary percussion music because recent developments have changed how performers and composers approach performance, musical composition, and listener interaction.

Literature Review

This examination of percussion literature focuses on innovation, various social aspects of music, as well as current dialogues in the developing discourse of "percussion studies."[4] The following literature has been arranged in chronological order. My reason for this approach is to illustrate the shift in scholarship from traditional instrument organology and history, such as James Blades' *Percussion Instruments and their History* (1974),[5] towards scholarly discussions on current trends in percussion. Since this dissertation focuses on current scholarship in percussion, I will briefly examine the texts discussing percussion organologies and history. I have decided to include these texts because scholars consider them as influential precursors to current literature. In doing so, I hope to trace how literature in percussion studies has developed.

In the 1992 revised edition of James Blades' seminal *Percussion Instruments and their History* (1974) Blades examines the current trends of the percussionist, and he states that "the upsurge [of instruments, orchestration, and techniques] has perhaps been

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[4] In this dissertation, I use the phrase "percussion studies" to refer to the burgeoning academic discourse that engages with scholarly research in percussion.
[5] James Blades, *Percussion Instruments and Their History* (London: Faber & Faber, 1974).

concentrated rather on techniques and their application than on the creation of the new and bizarre."[6] In other words, since his 1974 publication, Blades acknowledges that percussionists have adapted their technique to new performance requirements because composers were becoming innovative with their orchestration of percussion. By orchestration, I mean every musical demand (including instruments, orchestration, and technique) that is requested by the composer. However, if Blades were to observe the current trends in contemporary music, perhaps he would again revise his statement. Today, the "technique" that Blades observed is now considered standard practice in percussion music. For example, collegiate percussion programs focus on repertoire that creates performers who are adept to performing technically demanding repertoire. In my judgement, performers and contemporary music ensembles are becoming interested in compositions that are more akin to what Blades would consider the "new and bizarre."[7]

In John Mowitt's book entitled *Percussion: Drumming, Beating, Striking* (2002),[8] Mowitt presents three divisions that constitute what he calls "the percussive field." The three divisions are musicological, sociological, and psychoanalytical.[9] His project uses these divisions as a means for separating multifarious investigations of percussion as a gestural experience. Additionally, Mowitt argues that "...if music makes demands of theory, it is at the moment of selection—or, for interdisciplinarians, the moment of

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[6] Blades, 31.
[7] Ibid.
[8] John Mowitt, *Percussion: Drumming, Beating, Striking* (Durham and London: Duke University Press, 2002).
[9] Mowitt, 3–4.

combination."[10] This quote captures the essence of Mowitt's project, since his text is largely informed by the critical analysis of authors including Jacques Derrida, Theodor Adorno, and Louis Althusser. Mowitt's text, however, does not directly engage with the field of contemporary percussion music. Rather, he focuses on broad areas relevant to percussion, such as percussive signifying. Mowitt argues, "Something crucial about percussive signifying is at stake here, indeed something that cannot be discerned without theorizing some of the conceptual tools necessary for doing so."[11] This combination of critical theory with percussion is unique since it is one of the only texts that extensively combines critical theory with percussion studies.

In *The Percussionist's Art* (2006),[12] Steven Schick reflects on his personal experience as a solo performer of percussion literature. The text outlines his experiences with various percussion pieces that are standard repertoire, such as Edgard Varèse's *Ionisation* (1931), Iannis Xenakis' *Psappha* (1971), and Steve Reich's *Drumming* (1970). Schick's text includes autobiographical accounts, historical analysis, aspects of performance practice, and personal reflection. Schick does not consider the text a "how-to" manual for performing, but rather hopes to reflect on his experiences with the pieces.[13] For example, Schick ruminates on his experience working with composer David Lang on *The Anvil Chorus* (1991), a piece written for Schick. Since the composition requires three groups of metal resonant instruments, Schick suggests using three steel

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[10] Mowitt, 12.
[11] Mowitt, 3.
[12] Steven Schick, *The Percussionist's Art* (University of Rochester Press, 2006).
[13] Schick, xxvi.

pipes, four brake drums, two cowbells, and two tam-tams. Schick also discusses "sculptural and choreographic" considerations to the instrument selection, since he believes they should elicit the industrial aesthetic of the composition.[14] This connects directly to the performance-practice element of the text.

Schick also comments on the aesthetic quality of the compositions. For example, on the environmental quality of John Luther Adams' *The Mathematics of Resonant Bodies* (2003), Schick writes, "…this music is not about the environment alone, but about the position of an individual in the environment—about the place of a person among environmental forces outside of his or her control."[15] While any scholar familiar with Adams' music could make this comment, Schick's experiences reveal a personal connection with the composition through his performance and collaboration with Adams.

Scholars in percussion studies have recently published edited volumes as well. The *Cambridge Companion to Percussion* (2016),[16] edited by Russell Hartenberger, examines various perspectives on the topic of rhythm and percussion. The text incorporates contributions by various performers,[17] composers,[18] and instrument builders.[19] The text quickly switches between history,[20] performance practice in specific sub-disciplines,[21] and entries that utilize "insider" performer perspectives involving

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[14] Schick, 30.
[15] Schick, 88.
[16] Russell Hartenberger, ed., *The Cambridge Companion to Percussion*, Cambridge Companions to Music (Cambridge: Cambridge University Press, 2016).
[17] Sliwinski 2016, Currie 2016, Huang 2016, Schick 2016.
[18] Becker 2016, Treuting 2016, Reich 2016.
[19] Kvistad 2016, Mattingly 2016.
[20] Moersch 2016, Brett 2016.
[21] Huang 2016.

trends and developments in percussion.[22] The contributors are scholar-practitioners who are involved with or witnessed the development of the modern percussionist. Their personal experience and reflection combine with scholarly research to examine developments in percussion.

Aiyun Huang's contribution to this volume, "Percussion Theatre: The Drama of Performance," evaluates the importance of visual aspects of performance. She utilizes case studies of compositions in percussion theatre by Vinko Globokar, Mark Applebaum, Thierry de Mey, Georges Apeghis, and Jean-Pierre Drouet.[23] Her entry investigates histories and performance aspects of the compositions. Huang prefaces her case studies by briefly surveying three important areas that she believes shaped percussion theatre: technology, perception, and composition.

In her discussion of perception, Huang supports her claim that "musical communication is expressed through gesture" by considering a case study conducted by Michael Schutz and Scott Lipscomb.[24] Schutz and Lipscomb evaluated audience perception of short and long notes performed on a marimba through visual and audio recordings of professional marimbist Michael Burritt. With regards to composition, Huang argues that "composers… have made the specifics of percussive gesture (e.g., preparatory, sounding, or silent) essential musical material in their compositions" and provides evidence by considering the philosophical writings and compositions of John

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[22] Currie 2016, Becker 2016, Treuting 2016, Reich 2016.
[23] Russell Hartenberger, ed., in *The Cambridge Companion to Percussion*, Cambridge Companions to Music (Cambridge: Cambridge University Press, 2016), 133–41.
[24] Ibid., 130.

Cage and Mauricio Kagel.[25] For example, Huang draws on Cage's significant "The Future of Music: Credo" (1937) to consider Cage's "all-sound music of the future" as a starting point in the development of percussion theatre. She also examines Kagel's composition *Dressur* (1976-1977) as a point of departure from Cage's compositional style in percussion theatre. In comparison to Cage, Huang suggests that Kagel's *Dressur* exerts total control over the performer's actions.[26] The two pieces function as a comparative model for examining different approaches to composition in percussion theatre.

Furthermore, Huang asserts that technology has shaped percussion theatre. Huang presents a brief historical survey focusing of technological advancements in listening, consumption, recording, and performance. However, in comparison to her other sections, this area lacks specific case studies and examples. I agree with Huang that technology has had a tremendous impact on the subdiscipline of percussion theatre, and undoubtedly every aspect of percussion. But how might this phenomenon be examined through new approaches to ethnographic research concerning percussion and technology?

Percussionist Adam Sliwinski's contribution to the *Cambridge Companion to Percussion* entitled "Lost and Found: Percussion Chamber Music and The Modern Age" discusses the development of percussion chamber music by examining John Cage's influential composition *Third Construction* (1941). Sliwinski asserts, "As a percussion quartet, we owe an enormous debt to the string quartet tradition."[27] His main point is that

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[25] Ibid., 131–32.
[26] Ibid., 132.
[27] Ibid., 99.

the iconic musical transformation in string quartet repertoire—such as extreme dynamics, harmony, or extended techniques—shifted the listener's musical experience towards tone color. Similarly, percussionists have changed their traditional roles as orchestra members to chamber musicians, which parallel the transformation of the string quartet. This shift, Sliwinski persuasively argues, is indebted to Cage's development of the percussion ensemble as a legitimate musical ensemble.

Sliwinsky's entry shifts between case study and personal reflection. He insists, "…some of the intimacy of chamber music is driven by the relationship that musicians have with their instruments."[28] This intimate relationship is not unfamiliar to a percussionist. In fact, Sliwinsky's reflection captures the intrinsic creative essence of percussion performance. His account is the product of personal experiences and observations as an active performer of percussion music.

Sliwinsky asserts, "The trend I see right now is toward percussion groups finding a new voice and niche for themselves, not rushing to artistically imitate other successful groups."[29] What Sliwinsky does not mention is exactly how these groups are finding a new voice. Undoubtedly, Sliwinsky and his group Sō Percussion have developed their own voice in the realm of percussion ensembles. In my observation, these groups are developing different identities through commissions and collaborations with new composers. These efforts help create a unique voice for the percussion groups, but also create new repertoire for future generations of percussionists. This statement is especially

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[28] Ibid., 107.
[29] Ibid., 114.

important for this dissertation because it considers case studies of performers and composers using new approaches to percussion through space, performance, and technology.

The Modern Percussion Revolution: Journeys of the Progressive Artist (2014),[30] edited by Gustavo Aguilar and Kevin Lewis, reflects and critiques the historical development of percussion music. Contributions include research articles,[31] convention panels,[32] and personal reflections.[33] The text is perhaps the most comprehensive and balanced blend of performance practice with scholarly research in percussion.

In his contribution titled "What of the Performers? The Case of the Percussion Group Cincinnati and the Need to Reconsider Percussion Chamber Music Historiographies," Thomas Kernan encourages scholars to reconsider previous percussion histories to focus on performers rather than composers. Kernan highlights the importance of "...interaction, collaboration, and partnership that remains common in the creation of the chamber percussion repertoire."[34] Kernan's aim is to investigate the performer in the composer-performer relationship to examine unseen relationships in the musical work. He organizes his research by composer and project, including John Cage, Russell Peck, and John Luther Adams. This approach, in my opinion, is unique for percussion studies because Kernan considers historiographies of multiple composers, not just one. He

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[30] Gustavo Aguilar and Kevin Lewis, eds., *The Modern Percussion Revolution: Journeys of the Progressive Artist* (New York: Routledge, 2014).
[31] Kernan 2014, Lane 2014, Whiting 2014, Lewis 2014.
[32] Sallak 2014.
[33] Otte 2014, Schick 2014, Esler 2014.
[34] Aguilar and Lewis, *The Modern Percussion Revolution: Journeys of the Progressive Artist*, 18.

carefully examines different artists that Percussion Group Cincinnati has collaborated with. For example, Kernan discusses the artistic collaboration between group member Allen Otte and composer John Luther Adams during the creation of Adams' percussion quartet *Strange and Sacred Noise* (1997). In doing so, Kernan discusses the multiple revisions that the composition underwent. This supports his argument that an examination of the collaborative relationship between both composer and performer is an integral part of composition.

The most recent contribution to percussion studies is the "Percussive Notes Online Research Edition," a project created by the Percussive Arts Society. The journal has a rather inconsistent publishing history. However, a recent renewal in interest has produced the first entry of the Online Research Edition. The journal hopes to include "historical musicology, critical theory, aesthetics, music analysis, performance practice, interdisciplinary studies, ethnomusicology, and interviews."[35] This journal is a promising beginning to new research for scholars interested in percussion studies.

Chapter Outline

Chapter 1 examines the use of physical and virtual space in new works for contemporary music. I consider space an important topic of discussion because composers and performers are exploring new approaches to site-specific performances involving both physical and virtual space. First, I compare space in John Luther Adam's *Inuksuit* and Matthew Burtner's *Auksalaq*. In *Inuksuit,* performers are placed outside. The ninety-minute composition progresses through various performance locations, utilizing a

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[35] Kevin Lewis, ed., *Percussive Notes Online Research Edition* Volume 1 (October 2016).

variety of different instruments. The result is a massive soundscape that supplements the surrounding environment, adding new sonic possibilities through different percussive timbres. In *Auksalaq,* a performance takes place across several remote concert locations. The performance locations are experienced simultaneously through networked audio and video. As a result, these separate locations culminate in a single networked performance of the opera.

Chapter 2 begins with a brief survey of research examining performance and collaboration between musicians and composers. I consider collaboration an important topic since there has been little theoretical scholarship that examines this phenomenon in percussion studies. My contribution focuses on the experiences of the performers and instrument makers involved with the commissions. The chapter examines Bryce Dessner's composition *Music for Wood and Strings,* as well as Devonte Hynes' works *For All Its Fury* and *Perfectly Voiceless* (2019). Dessner's piece requires the creation of a new musical object for performance. The collaborative efforts of Sō Percussion, Bryce Dessner, and instrument builder Aron Sanchez resulted in the chordstick; a tuned string instrument that is played like a hammered dulcimer. Hynes' compositions are realized and arranged by Third Coast Percussion. The result is a collaborative and dynamic composition constructed through the arrangement and orchestration of MIDI files for percussion instruments.

Chapter 3 investigates *Resonance, in Three Movements* (2020), a composition for four-track cassette recorder and amplified percussion instruments. The work is a collaborative composition between artist Randall Taylor and the author. The twenty-four-

minute composition is discussed using new approaches to ethnography, including interviews, digital audio workstation screenshots, and different photo documentations. The dissertation analyzes the movements of the composition and highlights conversations between both Taylor and the author. The index of this dissertation contains an interview with Taylor, as well as two full length transcriptions of correspondences.

Chapter 1: Physical Space, Virtual Space: Environment in John Luther Adams' *Inuksuit* and Matthew Burtner's *Auksalaq*

Introduction

In this chapter, I examine how Alaskan composers Matthew Burtner and John Luther Adams attempt to engage listeners and performers with their environment through both physical and virtual spaces. Burtner's composition entitled *Auksalaq* (2012), which is an Inupiat word for "melting ice and snow,"[36] connects different performance locations through the use of telematics. Telematics are a stream of audio/visual content between high-speed networked locations in which art, media, and information is synthesized between several remote performance locations. In contrast, Adams' *Inuksuit* (2009), an Inuit word meaning "that which acts in the capacity of a human,"[37] challenges traditional performance spaces by placing performers and listeners outside. Outside, listeners and performers interact with the physical space of their surroundings by exploring different site-specific performance locations. Drawing upon scholarship pertaining to ecology and soundscapes, I argue that Adams' *Inuksuit* and Burtner's *Auksalaq* transform a listener's physical and virtual space and provides deeper insight to how composers can reconceptualize space as a compositional tool as well as a performer. How might scholars interested in physical and virtual space examine space as an active performer in a performance?

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[36] Matthew Burtner, "Auksalaq," accessed January 16, 2020, http://matthewburtner.com/auksalaq/.
[37] Norman Hallendy, *Tukiliit: The Stone People Who Live in the Wind* (Vancouver, British Columbia: Douglas & McIntyre and University of Alaska Press, 2009).

Here many musicologists may argue that these explorations in spatial music have already been explored by composers. One example is the Venetian polychoral style of Giovanni Gabrieli, who strategically placed antiphonal choirs inside of the cathedral. Karlheinz Stockhausen's *Helikopter-Streichquartett* (1991) involves a string quartet performing music onboard four helicopters. Pauline Oliveros' series of *Sonic Meditations* (1974) also consider the importance of spatial listening.

One of the earliest and perhaps most profound examples of spatial music is Edgard Varèse's *Poème électronique* (1958), which was written in collaboration with Le Corbusier for performance at the Phillips Pavilion during the 1958 Brussels World Fair. The composition uses the medium of three-track tape, dispersing sound to 425 different speakers. The eight-minute composition accompanies a film created by Le Corbusier, featuring black and white still images. *Poème électronique* progresses through different performance sections, similar to a performance of *Inuksuit*.[38] The thematic sections contain specific instrumentation and sounds that create a sense of unity and direction throughout the performance. Listeners at the premiere of *Poème électronique* were able to explore the architecture of Phillips Pavilion accompanied by the spatial audio composed by Varèse.

The structure of this chapter is as follows: first, I briefly outline ecological writings presented by Timothy Morton and R. Murray Schafer. Then, I investigate how these concepts of physical and virtual space manifest in Adams' *Inuksuit* and Burtner's

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[38] Scholars interested in the timeline and graph of the images and sounds from the performance should read the following article: Vincenzo Lombardo et al., "A Virtual-Reality Reconstruction of Poème Électronique Based on Philological Research," *Computer Music Journal* 33, No. 2 (June 2009): 24–47.

Auksalaq. To conclude, I reflect on how these compositions enrich scholarship about physical and virtual space in both contemporary music and ecomusicology.

Timothy Morton's *The Ecological Thought* (2010) is the prequel to *Ecology without Nature* (2007). Morton's text explores a wide range of ecological thought, from ecological art and the environment to the rejection of animism and the movie *Blade Runner*. Morton contends that ecological art amplifies our connections with the environment. He argues, "Studying art provides a platform, because the environment is partly a matter of *perception*. Artforms have something to tell us about the environment, because they make us question reality."[39] Morton's claims raise some interesting areas to be explored by artists. In what ways can the environment make viewers question reality? To what extent does this action require careful attention of the viewer or listener to discover previously overlooked connections between themselves and the environment? Morton also states, "Ecological art, and the ecological-ness of all art isn't just about something (trees, mountains, animals, pollution, and so forth). Ecological art *is* something, or maybe it *does* something."[40] By intentionally using an italicized is and does, Morton is suggesting that the physical environment is also an active performer, and for our purposes, involved in the composition.

Composer R. Murray Schafer approaches physical space in his musical compositions similar to Morton's conception of the natural environment. In fact, Schafer's cycle of music dramas titled *Patria* (1991) were performed in predetermined

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[39] Timothy Morton, *The Ecological Thought* (Cambridge, MA: Harvard University Press, 2010), 7.
[40] Ibid., 11.

site-specific locations, such as an abandoned factory, or underground mine. These works came after the publication of his most well-known text, *The Soundscape: Our Sonic Environment and the Tuning of the World* (1977).

Schafer's text is part of the World Soundscape Project, which is his attempt to understand the sonic environments surrounding noise pollution. Most important to this discussion are his writings in the section titled "Music, the Soundscape and Changing Perceptions." Schafer opens his discussion about Western classical music and the environment by illustrating how the concert hall acts as a "substitute for outdoor life" by tracing how composers imitate landscapes in music.[41] He maintains that these interests run analogous to the development of landscape painting. He examines how art galleries and their "room(s) with a thousand avenues of departure" transport the viewer into the depicted setting within a painting.[42] Regarding music, he writes, "This blurring of the edges between music and environmental sounds may eventually prove to be the most striking feature of all twentieth-century music."[43] *Partria*, Schafer's early cycle of music dramas and Adams' *Inuksuit* share the thread of being music for site specific performance. Schafer's music dramas relate to Burtner's *Auksalaq* because a performance involves different locations that synthesize their experiences into one collective performance.

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[41] R. Murray Schafer, *Our Sonic Environment and The Soundscape: The Tuning of the World* (Vermont: Destiny Books, 1977), 104.
[42] Ibid.
[43] Ibid., 111.

In this chapter, I attempt to reveal that scholars interested in spatial music and composition will find Adams' and Burtner's compositions particularly interesting because of the way they handle physical and virtual space. The compositions force the participants to become active listeners in a new musical landscape. My goal in this discussion is for the reader to become aware of the multifaceted layers of interaction that ecological art and music creates in a specific geographic space. These composers reimagine our previous roles as listeners of soundscapes, viewers of landscapes, and our interactions with environments, be it physical or virtual.

Physical Space in John Luther Adams' *Inuksuit*

John Luther Adams' *Inuksuit* is a composition for nine to ninety-nine percussionists. A performance of *Inuksuit* generally takes place at a predetermined site-specific location. Performances of *Inuksuit* involve a day of rehearsal at a space before setting up at the performance location. *Inuksuit* claimed media attention after Alex Ross' write up of the 2011 indoor performance at the Park Avenue Armory during the Tune-In Music Festival. Describing the indoor performance of the piece, Ross writes, "Adams at first resisted the idea of taking the piece indoors, because the interaction with nature was integral to his conception. After inspecting the Armory, though, he grasped its possibilities; the space is more a man-made canyon than a concert hall."[44] The physical performance environment plays a crucial part to the performer and listener's experience with *Inuksuit*. Adams encourages the use of outdoor space in the score to *Inuksuit*, stating

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[44] Alex Ross, "Reverberations," The New Yorker, accessed April 8, 2020, https://www.newyorker.com/magazine/2011/03/14/reverberations.

that "…*Inuksuit* may be performed in almost any outdoor setting, from mountains to plains, from forest to desert, from remote wilderness to city park. This piece is not intended for performance indoors."[45] The performance space allows for listers and performers to move from location to location. Adams writes in the score to *Inuksuit*,

> *Inuksuit* is a concert-length work for percussion, in which the performers are widely dispersed and move throughout a large, open area. The listeners, too, may move around freely and discover their own individual listening points. This work is intended to expand our awareness of the never-ending music of the world in which we live, transforming seemingly empty space into more fully experienced place.[46]

Because of the loose form of the piece, performances can range from seventy-five to eighty-five minutes. The composition unfolds through a series of performance events that involve different groups of percussion instruments.

Percussionist Steven Schick provides a detailed commentary on *Inuksuit* in his essay "Strange Noise, Sacred Places."[47] The nine to ninety-nine percussionists are split into three instrumental groups. Group 1 features sirens and triangles, and performs the sections "Breathing," "Calls," "Waves," Clangs," and "Wind." Group 2 features friction instruments such as rubbed stones and rattles, and later in the composition toms and bass drums, and performs the sections "Wind," "Inuksuit (rising)," "Waves," "Inuksuit (falling)," and "Waves." Group 3 features suspended cymbals, tam-tams, and orchestral

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[45] John Luther Adams, *Inuksuit*.
[46] Ibid.
[47] Steven Schick, "Strange Noise, Sacred Places," in *The Farthest Place: The Music of John Luther Adams*, ed. B Herzogenrath (Northeastern University Press, 2012).

bells and performs the sections “Wind,” Inuksuit (rising),” “Waves,” “Inuksuit (falling), and “Birdsongs.” Table 1 illustrates the groups, their specific titled sections, and the instruments that are involved.

Table 1. Performing groups, sections, and instruments in John Luther Adams’ *Inuksuit*.

Groups	**Section**	**Instruments**
Group 1	Breathing, Calls, Waves, Clangs, Wind	Sirens, Triangles, Bells
Group 2	Wind, Inuksuit (Rising), Inuksuit (Falling), Waves	Toms and Bass Drum
Group 3	Wind, Inuksuit (rising), Waves, Inuksuit (falling), Birdsongs	Suspended Cymbals, Tam-Tams, Orchestra Bells, Optional Piccolos

These instrumental groups enter the composition at specific predetermined entry points during the performance. The entry points can be found on the event map that is provided in the score to *Inuksuit*. Figure 1 is the event map for performance.[48]

[48] John Luther Adams, *Inuksuit*.

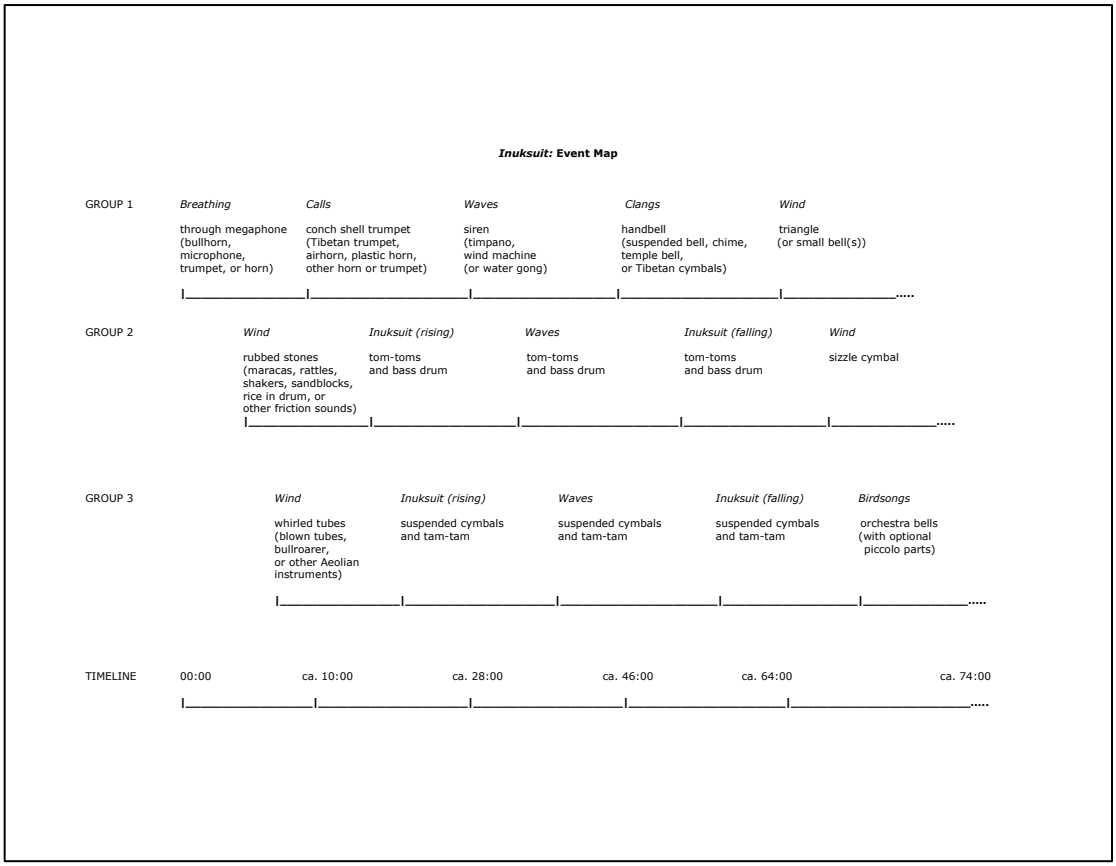

Figure 1. Event map from *Inuksuit.*

The x-axis of the event map loosely indicates when the groups are to perform their sections and what instruments they are to perform on. The y-axis indicates which instrumental group performs. During a performance, performers read from a score that utilizes graphic notation. The measures in the score are stacked upon each other, resembling the stone inuksuit created by the native Arctic people from Alaska to

Greenland.[49] Figure 2 and Figure 3 are images of stone inuksuit from Norman Hallendy's text, *Tukiliit: The Stone People Who Live in the Wind*.[50]

Figure 2. Inuksuit in the Foxe Peninsula.

Figure 3. Inuksuit cluster.

[49] David Arie Shimoni, "Ecocentric Music," in *The Farthest Place: The Music of John Luther Adams*, ed. B Herzogenrath (Northeastern University Press, 2012), 253.
[50] Hallendy, *Tukiliit: The Stone People Who Live in the Wind*. 68-69.

Performers begin their part from the bottom of the page, building up their own rhythmic structure. Complex polyrhythmic patterns begin to emerge as measures begin to layer. Performers keep their own internal pulse at the value of a quarter-note equaling sixty beats per minute. This means that none of the performing parts will align, and if they do it is merely coincidental. Figure 4 is an example of an Inuksuit (rising, falling) part for Group 2.[51]

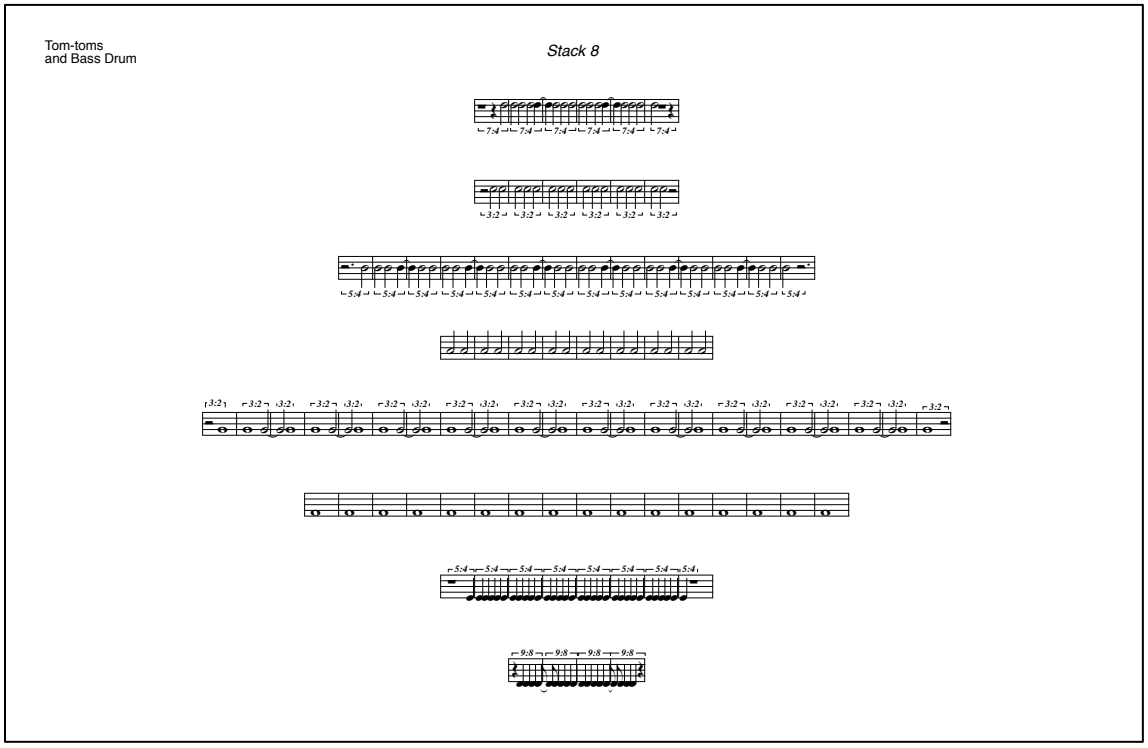

Figure 4. Group 2, Stack 8 from "Inuksuit (rising, falling)", *Inuksuit*.

[51] John Luther Adams, *Inuksuit*.

For the section Inuksuit (rising), performers begin with the bottom rhythmic passage, and slowly build on rhythmic passages above. When performing the section Inuksuit (falling), performers begin at the top of the page and perform all of the rhythmic passages, but downwards. Performers eventually remove passages, starting from the top of the page to create the sense of "falling." The rising and falling passages are only performed by Group 2 and 3. Group one performs short rhythmic passages on sustained percussion instruments that are juxtaposed over the other group's passages. Figure 5 is an image of Group 1's "clang" section, which takes place in the last half of the composition, just before the complex polyrhythmic deconstruction of Group 2 and 3's Inuksuit (falling).[52] Space before or after the measures are to be interpreted as measures of rest. Performers are encouraged to count the passages of rest internally. This creates a sense of control and cohesion among the parts and also allows for the performers to examine the developing soundscapes.

[52] Ibid.

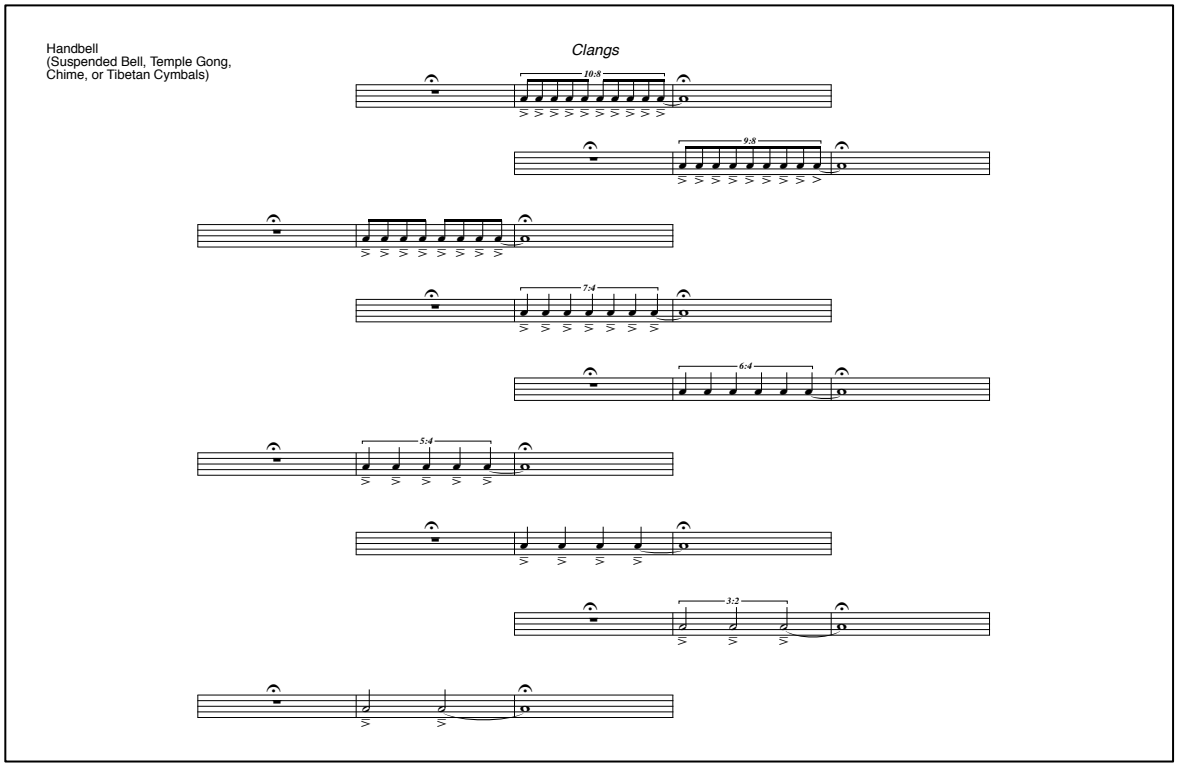

Figure 5. Group 1, "Clangs", *Inuksuit*.

Prior to a performance, groups set up in their predetermined performance location with the instruments they need for performance. For example, Group 2 will set up a performance location to perform the sections Inuksuit (rising), Waves, Inuksuit (falling), and "wind" with their eight drums and sizzle cymbal. A performer from Group 2 will begin at the central location with the rest of the ensemble, then move to their predetermined location during the section "wind." A performance of *Inuksuit* begins in a central location. This is where Group 1, 2, and 3 will perform their sections "breathing" and "wind." As the piece unfolds, performers move to their performance locations where the composition's events and sections unfold.

In a performance of *Inuksuit*, each group will perform five different events. As mentioned earlier, the beginnings of these events are agreed upon before performance, and their entrances are staggered. It is the performers responsibility to be aware of what section their group is performing and when to move to the next section of musical material. Similarly, it is up to the listener to decide which sounds they want to explore throughout a performance of *Inuksuit*. For example, a listener may follow one performer for the entire duration of the performance. In doing so, they will experience how the performer's part is juxtaposed against the other sounds of the ensemble or other performers. Another listener may decide to experience the performance away from the performers, enjoying the total sonic landscape created by all of the performers. In my personal experience performing the piece, some of the most engaged listeners of the performance were individuals who were unaware that they were in the midst of the performance. During a performance, these listeners approached me and asked, "What are you doing? Is this some piece of art?" Some of the same individuals approached me to talk afterword, completely enamored with the performance. Most of these conversations took place during or after the final section of the piece, performed by Group 3 and titled "Birdsongs." Adams arranges birdsongs for bells and piccolos based on the geographical location of the performance. Figure 6 is an example from the score.[53]

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[53] Ibid.

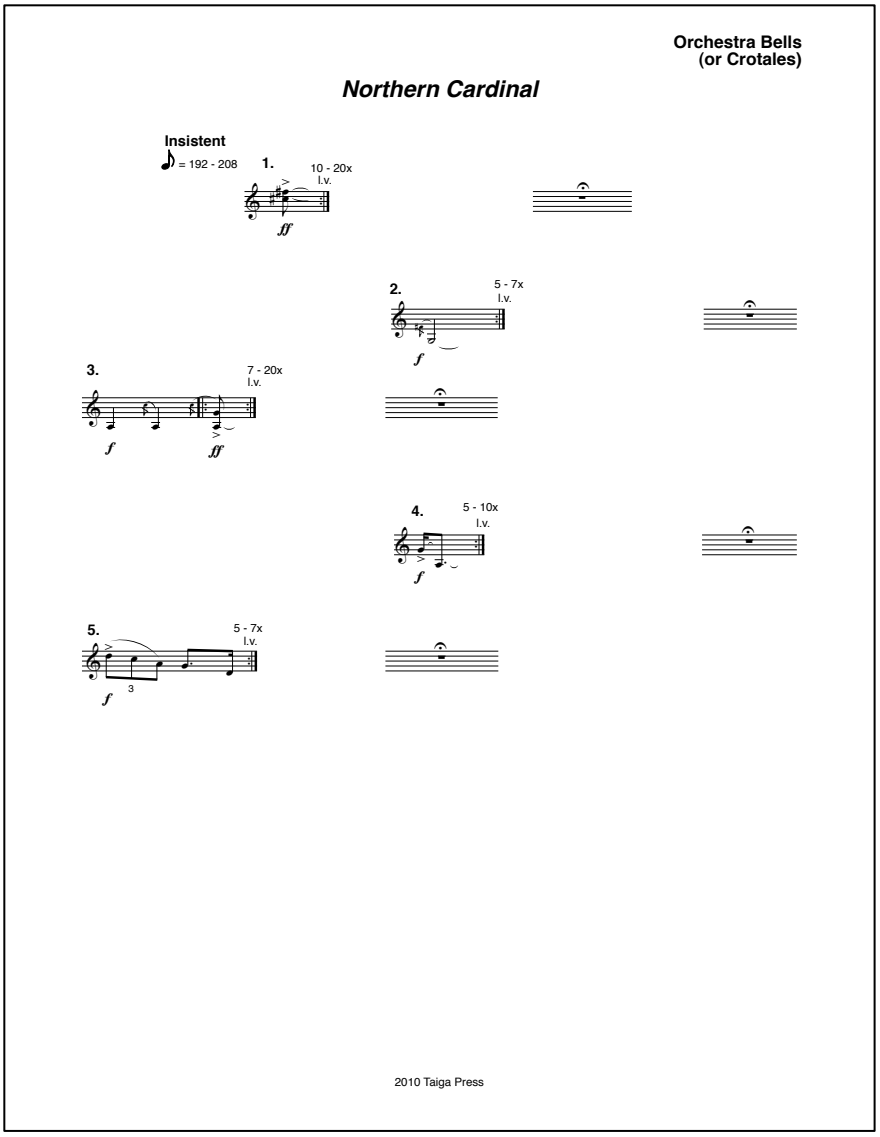

Figure 6. Group 3, "Birdsongs" of the Northern Cardinal. *Inuksuit*.

The ending of *Inuksuit* seemingly fades away with birdsong melodies accompanying the soundscape of the physical environment. During my performance of *Inuksuit* in Cleveland, Ohio in 2014, there was a few minutes of musical silence from the performers before the listeners applauded. For me, this was perhaps the most profound and impactful moment of the performance. The seventy-five-minute composition seemed to dissipate

back into the soundscape of the natural environment. Performers fade out their parts in an effort to dissolve into the surrounding sounds—the chirping of local birds, the near-distant sounds of automobiles, the whistling of the wind, or the roars of a nearby storm.

Audience members are given the autonomy of shaping their own listening experience. The largest variable considerations to this experience is the performance's geographic location and the weather. Figure 7 is a photograph by Sean Brackbill of audience members wandering freely among performers during *Inuksuit*.[54]

Figure 7. Performer in Group 3 positioned above listeners.

[54] Melanie Voytovich, "John Luther Adams' *Inuksuit*: Q&A with Melanie Voytovich," *Second Inversion* (blog), accessed July 8, 2020, https://www.secondinversion.org/2015/09/18/live-concert-spotlight-john-luther-adams-inuksuit/.

On the matter of the listener, Adams writes,

> One listener may choose to root himself in a central location for the entire performance, listening as the music gradually expands within the performance site. Another listener may choose to follow the path of a single performer. In doing so, the listener will experience a wide range of aural perspectives, from the monumental presence of the nearby, to barely audible sounds in the distance. Yet another listener may choose to wander freely throughout the performance, following wherever his ears may lead him, discovering musical moments and spaces that no other listener may ever hear.[55]

The spatial freedom created by moving the performance location outdoors allows for everchanging and evolving interpretations of *Inuksuit*. As a composer, using the geography of a performance location, weather, and number of performers as musical variables creates a timeless composition based on musical landscapes. Adams has also spent time examining his role as a composer in the broader tradition of spatial music.

In 2011, Ben Cosgrove, a composer and multi-instrumentalist, published an interview with John Luther Adams. During the interview, Adams revealed that he did not feel connected to Schafer's compositional tradition but acknowledges the profound impact that the World Soundscape Project has had on his music. In other words, Adams felt like an outsider to Schafer's project with sonic environments, but he still maintains that the project has deeply impacted his work as a composer. Cosgrove correctly asserts that Adams' emphasis as a composer is on musical evocation. To follow up, Adams explains, "I'm after something else; it's not as literal. My thinking about soundscapes and natural sounds… are not questions that I think about on a daily basis. They don't seem directly pertinent to my work now. But still I think they somehow deeply inform who I

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[55] Ibid.

am as an artist and the way I approach music. They're deeply internalized but also a little bit transformed."[56] Adams elaborates that his focus as composer is on awareness, or as he states in the interview, ecological awareness. In Adams' view, "Rather than retreating into our digital caves, remembering to turn our attention outward, toward the larger world in which we live…longing to find or rediscover our place within this larger music of the world. Which I think somehow we lost along the way, especially in Western culture."[57] Finally, Adams states that his compositions are not in the general sphere of musical landscapes, arguing that, "I'm no longer painting musical landscapes, I'm hopefully somehow creating musical places in which are bigger than the composer understands… you the listener can find your own way and hopefully have your own experience which may include getting hopelessly lost, which is what I want for myself."[58] Adams is disinterested in using the term landscape because of its specific and limiting evocations based on our individual subjective experiences, both as performers and listeners. In other words, by focusing instead on the term soundscape, we are able to examine a multitude of different spatial experiences and the way in which they create musical places. This may create a point of contention for researchers. On one hand, researchers may argue that musical space and place are tied together through the composition's performance. On the other hand, when considering musical soundscapes separate from a musical landscape, one may forgo the possibility of uniting performance and place. What is at stake here is

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[56] Ben Cosgrove, "John Luther Adams," Ben Cosgrove, accessed December 10, 2019, https://www.bencosgrove.com/interviewblog/2018/9/12/9-john-luther-adams-from-2011.
[57] Ibid.
[58] Ibid.

the emphasis on performance location and its ability to inform both performers and listeners about their geographical listening experience. The act of listening in the post-industrial soundscape and the geographical listening experience is discussed at length by R. Murray Schafer in his seminal text, *The Soundscape: Our Sonic Environment and the Tuning of the World*.

Schafer argues that "unfocused" listening is widely prevalent throughout our culture.[59] For example, because our everyday aural environments become embedded in our day to day experience, they become routine soundscapes. We only become truly aware of our position in a space when we notice an interruption. Schafer also explains that the terms *gesture* and *texture* can describe sonic events. *Gesture* refers to a unique sonic event, while *texture* refers to the "generalized aggregate... mottled effect… the imprecise anarchy of conflicted actions."[60] A performance of *Inuksuit* relies heavily on the use of musical gesture to introduce difference into a physical and sonic space. The study of musical gesture is prominent in the discourse of musicology. One of the most interesting and accessible approaches to musical gesture was created by The University of Oslo's "The Musical Gestures Project."[61] The project offers the study of musical gesture in three main categories, sound-producing gestures, sound-accompanying gestures, and amodal, affective, or emotive gestures.[62] Because of the sheer depth of the

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[59] Schafer, *The Soundscape*, 158.
[60] Ibid., 159.
[61] University of Oslo, Musical Gestures Project. "About the Project," October 20, 2006. https://web.archive.org/web/20061020080718/http://www.hf.uio.no/imv/forskning/forskningsprosjekter/musicalgestures/about.html.
[62] Ibid.

research and its application in music research, we will only focus on the project's main categories and their relation to physical gesture in *Inuksuit*. The following analysis will examine how these three categories can examine musical gesture in *Inuksuit*. Table 2 is a graph of the main categories and their relation to gestural elements in a performance of *Inuksuit.*

Table 2. Gestural elements in *Inuksuit* in relation to musical metaphor.

Groups	**Gesture**	**Section of Piece**	**Musical Metaphor**
Performing Group 1	Breathing	Breathing, Calls ▪ Theatrical breathing through megaphone, horns, shells	Metaphor of breathing, life, calling
	Physical Motion	Waves, Clangs, Wind ▪ Starting of sirens and wind machine, physical striking of handbells and triangles	Metaphor of large crashing waves, calls, rustling of the wind
Performing Group 2	Friction	Wind ▪ Theatrical performance of friction instruments	Metaphor of nature rustling
	Intense Physical Motion	Inuksuit (Rising, Falling), Waves, Wind ▪ Striking drums, striking sizzle cymbals	Metaphor of building of inuksuit stone structures, then falling over, rustling of wind.
Performing Group 3	Intense Physical Motion	Wind ▪ Physical motion of whirling tubes, bullroar	Metaphor of melodic wind
		Inuksuit (Rising, Falling) ▪ Physical striking of cymbals and tam-tams	Metaphor of building inuksuit stone structures, then falling over
	Physical Motion	Birdsongs ▪ Physical striking of orchestral bells	Metaphor of local birdsongs
Audience/ Environment	Physical Motion	Varies (Sounding of nearby animals, weather patterns, near-distant infrastructure)	Varies

This graph is not meant to be a descriptive analysis of every sound-producing gestural aspect of *Inuksuit*. Rather, it is a beginning place for us to examine the extent to which different sound producing gestures inform musical metaphor in the composition. Some of the gestures are intended to be theatrical. For example, the gestures of breathing and friction are to be performed theatrically. In the performance notes to the composition, Adams writes, "As you move out from the center toward your outermost performance stations, stop at nine roughly equidistant locations along the way... You may also turn as you perform, perhaps raising and lowering your Breathing instrument."[63] This is to bring attention to the subtle sounds produced by the instruments. I included the audience and the environment because they both engage with the sound-producing gestures. I decided to leave section and metaphor open to interpretation because of the different geographical and weather-dependent situations that vary from performance location. Scholars or performers who are interested in the previously mentioned gestural aspects may find it rewarding to record their own observations performing or listening to *Inuksuit*. Scholars may then be able to observe how these elements vary from performance to performance. The next category from "The Musical Gestures Project" is sound-accompanying gestures, illustrated in Table 3. Sound-accompanying gestures are gestures that are made to music, but they can also follow "melodic contours, rhythmical/textural patterns, timbral or dynamical evolutions, etc. with our hands, arms, torso, etc."[64]

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[63] John Luther Adams, *Inuksuit*.
[64] Ibid.

Table 3. Sound accompanying gestures in *Inuksuit*.

Performers	▪ Walking to performance location (not in sync with musical textures, informed by event-timing of performance) ▪ Increased performance gestures during nuanced polyrhythmic performance of Inuksuit (rising, falling) ▪ Gesture of dynamic contrast following score indications
Listeners	▪ Walking to different performance locations (not in sync with musical textures, but loosely informed by event-timing of performance

Most of the sound-accompanying gestures in *Inuksuit* come from the performers. Listeners are also considered in this analysis because they may be compelled to follow a certain sound or performer throughout the performance. Their movements and interactions create sounds that become part of *Inuksuit*. The final category includes amodal, affective, or emotive gestures created during performance. Table 4 includes examples of performers, listeners, and the environment as they relate to emotion/perception in performance.

Table 4. Elements of *Inuksuit* related to gesture, section, and emotive gesture.

	Gesture	**Section**	**Emotion/Perception**
Performers	Theatrical breathing	Breathing, Wind	Stasis, patience
	Calls from shells	Calls	Impatience, unrest
	Building of Inuksuit	Inuksuit (rising)	Elation, velocity
	Waves of wind	Waves	Unrest
	Falling of Inuksuit	Inuksuit (falling)	Impatience, anger
	Rustling of wind and birdsong	Wind and Birdsong	Calm, balance, order
Listeners	Varies on performance and location	Varies on performance and location	Varies on performance and location
Environment	Varies on performance and location	Varies on performance and location	Varies on performance and location

This graph is particularly interesting because of the addition of the final column, emotion/perception. While this is perhaps the most abstract graph from the selection, it is interesting to trace how gesture implies that certain sections of the composition are taking place. For example, the gesture "building of Inuksuit" takes place during the section Inuksuit Rising. At this moment in the performance, the performer is slowly stacking complex polyrhythmic cells of music, thus building a stone inuksuit. As the rhythmic cells begin to stack onto each other, an overall sense of elation and velocity can be observed in the performer's gesture. These observations, while highly subjective, give a unique look into the marriage of performance gesture and emotion throughout the dramatic composition.

The next discussion will focus on Matthew Burtner's unique operatic work, *Auksalaq.* While Adam's *Inuksuit* uses gesture in physical space to create new musical soundscapes, Burtner's *Auksalaq* relies on virtual space to create a dynamic new experience across several remote performance locations. Adams' *Inuksuit* utilized the performer and listener's immediate physical environment as an active performer in the composition. But how might composers create an immediacy to physical space through the use of remotely connected virtual environments?

Virtual Space in Matthew Burtner's *Auksalaq*

Alaskan composer Matthew Burtner is an eclectic composer and sound artist. His composition *Auksalaq* is one of three multimedia operatic works. Burtner developed the piece in conjunction with percussionist Scott Deal to create a live interactive work that challenges traditional conceptions of performance and listener interaction. Deal is an active performer of percussion music that focuses on solo, chamber, and mixed media works. He has experience performing the music of both Burtner and Adams. He is also the founder of the Telematic Collective, which is described as "an internet performance group comprised of artists and performance specialists."[65] As a percussionist, Deal's efforts to investigate these collaborative territories help to establish new directions in the orchestration of interactive media experiences.

Auksalaq includes simultaneous computer music, live performers, photography, film, commentary, and audience interaction all occurring at remote performance spaces,

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[65] "Scott Deal - Biography," accessed July 28, 2020, https://scottdeal.net/main/bio/.

which eventually combine to produce a new auditory and visual experience.[66] The piece is orchestrated for voices, variable instrumental ensembles, percussion quintet and ensemble, computer sound, and video media.[67] *Auksalaq* is not an opera solely for percussion. However, it does contain the composition *Six Ecoacoustic Quintets* (2009), which features percussion and electroacoustics.[68] The six compositions performed comprise of "No. 1, Water (ice)," "No. 2, Wood (pitch)," No. 3, Stone (sand)," No. 4, Metal (noise)," "No. 5, Air (breath)," and "No. 6, Skin (bones)." The composition exemplifies Burtner's interest in ecoacoustics. Burtner states, "Ecoacoustics derive(s) musical procedures from abstracted environmental processes, remapping data from the ecological into musical domain." The *Six Ecoacoustic Quintets* blend the worlds of graphic notation with standard Western notation. When discussing ecoacoustics, this dissertation will focus on another composition performed in *Auksalaq* titled *Iceprints* (2012), orchestrated for one to three pianos and electronics.

Auksalaq is an example of "telematic art," in which traditional art and media are synthesized within a high-speed internet connection.[69] When describing telematic arts and culture, Roy Ascott asserts, "…we do not think, see, or feel in isolation. Creativity is shared, authorship is distributed… enabling one to participate in the production of global vision through networked interaction with other minds."[70] The synthesis of the previously

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[66] Matthew Burtner, "Auksalaq," accessed November 1, 2015, matthewburtner.com/auksalaq.
[67] Ibid.
[68] Matthew Burtner, "Six Ecoacoustic Quintets | Matthew Burtner," accessed July 27, 2020, http://matthewburtner.com/six-ecoacoustic-quintets/.
[69] Other telematic works include playwright David Henry Hwang's *The Sound of a Voice* (2006) and Jimmy and Beth Miklavcic's *Interplay: Dancing on the Banks of Packet Creek* (2006). Scott Deal's article "Climate Change as Telematic Art" provides information about these performances.
[70] Roy Ascott, "Is There Love in the Telematic Embrace?," *Art Journal* 49, no. 3 (1990).

mentioned media in *Auksalaq* occurs over high-bandwidth internet, in which several remote performance spaces share in the performance of the piece, creating a multidimensional perceptual experience. Each performance venue takes part in a separate site-specific performance of the opera. Burtner's piece embodies Ascott's assertion of shared authorship because the performance also encourages the audience to actively participate. Audience members can interact during the piece over the networked telematic connection by posting thoughts and ideas to a projected virtual wall via handheld devices. The virtual interaction is intended to generate discussion through interpretation during and after the opera.[71]

Virtual interactive interpretations are encouraged to be shared by audience members via NOMADS, a wireless Apple iOS/Android application developed by Burtner, David Topper, and the Interactive Media Research Group. Figure 8 is an illustration of NOMADS provided by Matthew Burtner's webpage. The original image contains additional text and images that have been cropped to emphasize the connectivity of the application.

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[71] Matthew Burtner, "Auksalaq."

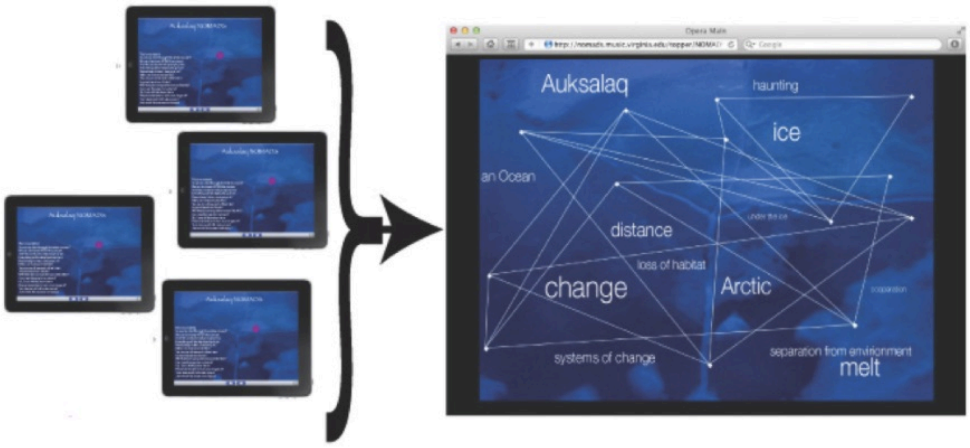

Figure 8. NOMADS connectivity between listeners' devices and the digital performance wall.

This image was provided by Burtner to illustrate the virtual wall created for audience members to interact with throughout the performance. This essence of interconnectivity brings remote performance locations and different physical spaces in contact with each other through the use of telematics. While seemingly separate, performers and audience members can collaborate through *Auksalaq's* use of virtual space. NOMADS allows for real time contributions to *Auksalaq*, thus turning a traditionally passive listener into an active participant. Figure 9 illustrates the telematic nature of *Auksalaq*.[72] The diagram highlights how the piece generates a form of shared creativity. Burtner maps out the performance through four different performance venues.

[72] Ibid.

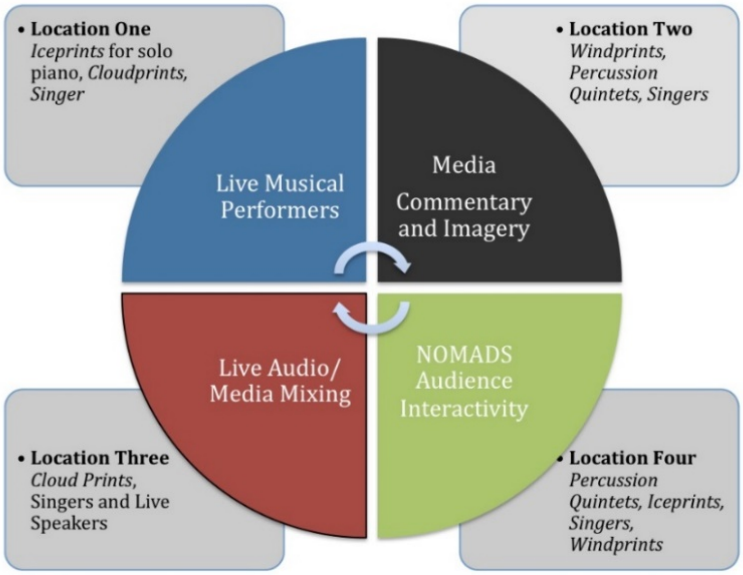

Figure 9. Telematic performance locations in *Auksalaq*.

Each location produces their own telematic experience. These remote locations combine across a digital network to create one virtual ecoacoustic environment. As previously mentioned, Burtner indicates, "Ecoacoustics derive(s) musical procedures from abstracted environmental processes, remapping data from the ecological into musical domain." [73] Furthermore, he describes that, "In *Auksalaq* we hear the wind blowing…(Windprints); the splitting ice…(Iceprints); and the vaporous movement of clouds…(Cloudprints)."[74] Although live performances of these pieces are specific to location site, each location has its own ecoacoustic environment of musical performers, live audio/media mixing, and audience interactivity.

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[73] Matthew Burtner, "Ecoacoustics" accessed March 21, 2018, http://matthewburtner.com/ecoacoustics/.
[74] Matthew Burtner, "'Auksalaq Music," accessed July 13, 2020, http://matthewburtner.com/auksalaqexcerpt/.

Figure 10 is an image taken by Scott Deal at the premiere performance of *Auksalaq* in 2012. The performance involved a number of performing ensembles including "University of Alaska Museum of the North, Tavel Center at IUPUI, CIRMMT at Schulich School of Music, McGill University in Montreal, Grieg Academy of Music in Bergen Norway, and the OpenGrounds Studio at the University of Virginia."[75]

Figure 10. Photograph from the premiere of *Auksalaq*.

Figure 10 is an image of one remote location engaged in a telematic performance of *Auksalaq.*[76] Performers can be seen in the image on stage and in the pit. A separate location also performing the piece is projected and live-streamed on the back-left screen.

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[75] Burtner, "Auksalaq."
[76] Ibid.

Live audio and media mixing is taking place on the equipment at the bottom of the image. Images are being projected onto the middle screen, and the NOMADS application can be seen on the projected screen to the right.

The score to *Auksalaq* relies heavily on graphic notation. Burtner uses different combinations of musical notation based on a perceived "ecoacoustic" approach to the music. For example, *Auksalaq* contains the section "Iceprints," which features pianos and digital playback of the Arctic Ocean's sub-ice ecoacoustics. *Iceprints* (2012) may also be performed as a concert piece separate from *Auksalaq*. Melodic and harmonic content for the piece is realized from the data and sonification graphs involving years of documented levels of change in the Arctic.[77] Figure 11 is from the performance notes of *Iceprints*.[78] The spectral graph of the data is used by Burtner to generate melodic material for the performance. The dynamics in *Iceprints* are also determined by a spectral graph.

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[77] Matthew Burtner, *Iceprints,* (Burtner, 2009).
[78] Ibid.

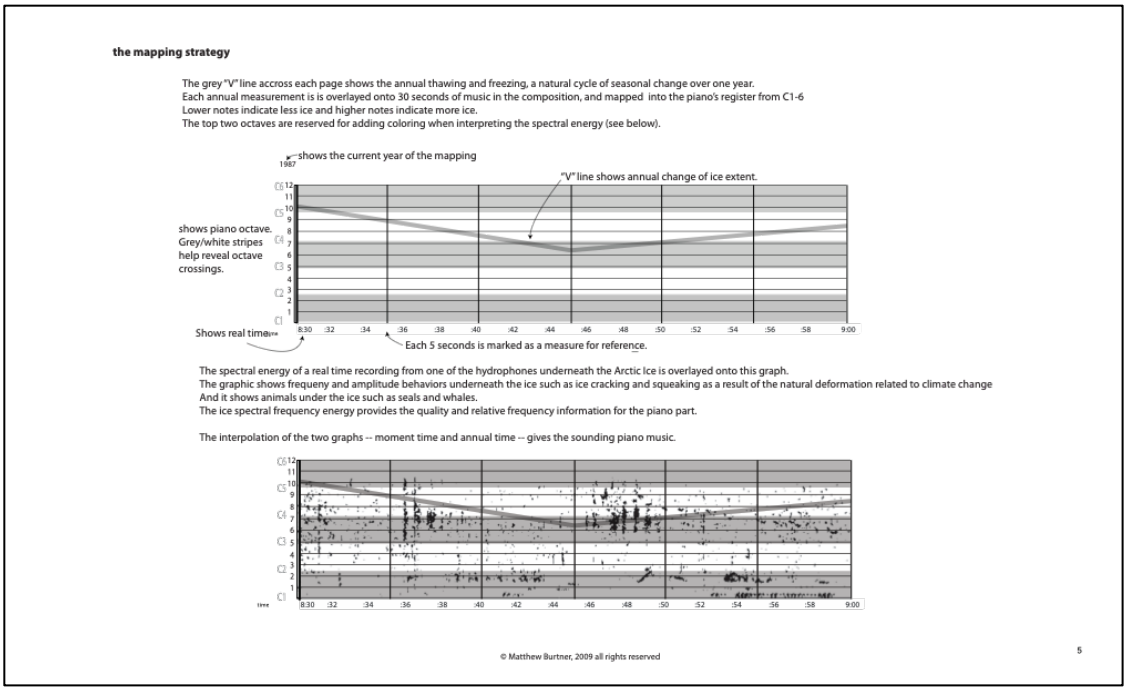

Figure 11. Excerpt from the performance notes of *Iceprints*.

When the two graphs are combined, they "provide a guideline for the pitches, rhythms, qualities and form of the piano music. [The] compound ecoacoustic data is then merged with the tonal system of the piece."[79] Burtner also outlines in the performance notes that the harmonic material for the composition is developed from a previous composition titled *Sikuigvik* (1997), which also refers to melting ice and snow. Figure 12 is an excerpt from the score of *Iceprints*.

[79] Ibid.

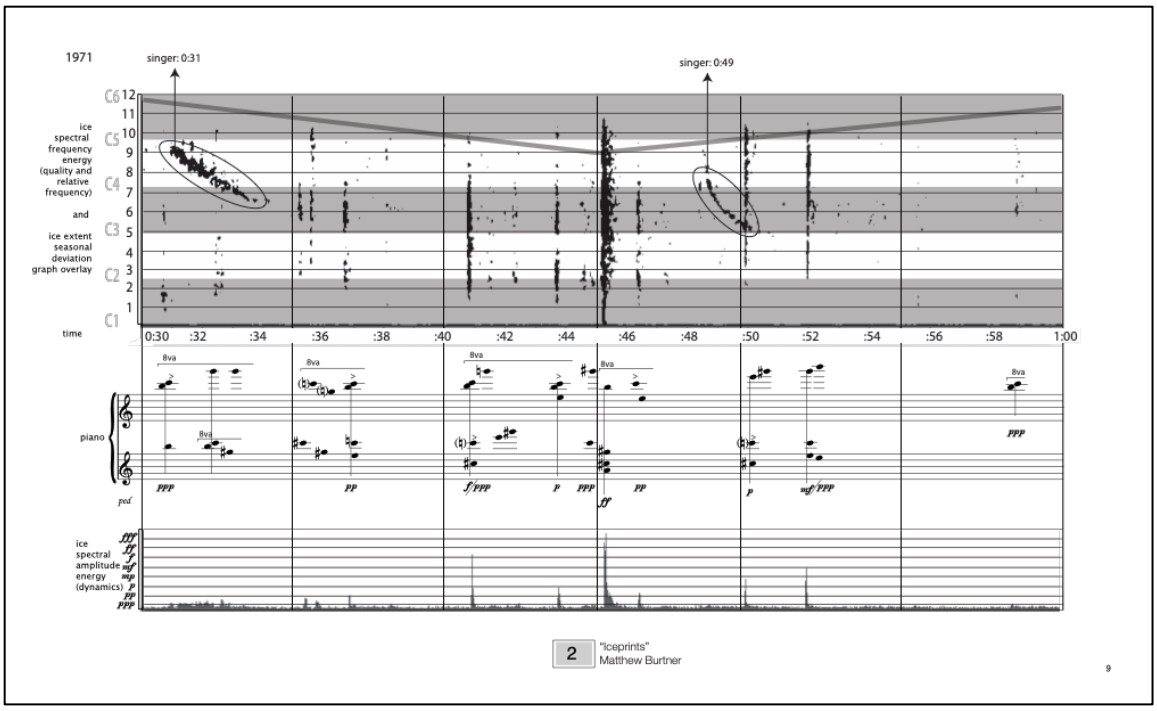

Figure 12. Excerpt from the score of *Iceprints*.

The top of the score contains both the annual freezing and thawing, as well as field recordings from a hydrophone underneath the Arctic ice. The Y-axis also coordinates with the specific octave for the piano part, between C1 and C6. The X-axis indicates the specific event timing during a performance. The data is then realized using Western notation below the graphs, with dynamics decided by the recorded amplitude of the sub-ice changes.

The virtual environment in *Auksalaq* exemplifies the use of telematics. As mentioned earlier in this chapter, telematics refers to the synthesis of audio/video across different performance locations through the use of high-speed internet connections. Burtner and Deal have published literature regarding the essence of telematics. In describing telematics, they write, “Telematic art is an expressive action involving human-

computer and human-computer-human interaction, where verbal and graphic narratives, musical concepts, data, and feedback combine with gestures to create a vivid information environment possessing media-IT dimensions."[80] The virtual information environment created in a performance of *Auksalaq* redefines our conceptions of physical and virtual space through the use of remediation. Remediation refers to a field of study in new media that investigates how mediums have the ability to copy, borrow, and transform into different mediums. In our case, the physical environment described in *Auksalaq* is composed, realized, and remediated through the use of different ecoacoustic properties. The previous example, *Iceprints*, first uses remediation by transforming graphs and data into musical characteristics for performance. Then, during a performance of the telematic opera, the musical composition is again remediated across several different performance locations.

Burtner conceives of the physical environment as an "embodied place" and the virtual environment as a "disembodied place." He explains that, "This perception of both embodied and disembodied place creates a unique sense of attachment and intimacy to the performance."[81] By immersing the audience in a dual perception of embodied and disembodied place, the virtual performance environment also acts as a performer. Similar to *Inuksuit*, no single performance of *Auksalaq* will be the same. The musical experience and environment observed by the performer and listener varies between performance

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[80] Scott Deal and Matthew Burtner, "Auksalaq, a Telematic Opera," in *Proceedings of the International Computer Music Conference* (University of Huddersfield, 2011).
[81] Scott Deal, "Climate Change as Telematic Art," in *North by 2020: Perspectives on Alaska's Changing Social-Ecological Systems*, ed. Hajo Eicken and Amy Lauren Lovecraft (Fairbanks: University of Alaska Press, 2011). 670.

location. The virtual space is a synthesis of our physical performance spaces remediated through the use of telematics. While each performer and audience member has their own experience of embodied place, which is central to their performance locations, the disembodied place seemingly dissipates through the creation of a singular network. While different physical performance spaces of *Auksalaq* are remediated through the use of a virtual environment, this did not keep the physical environment from impacting the premiere of the composition.

The premiere performance of *Auksalaq* was to be on October 29th, 2012. At this time, Hurricane Sandy began making its approach during the 2012 Atlantic hurricane season. The immanent approach of the storm forced two of the site-specific performance locations to cancel their premieres. The virtual environment at these locations ceased to exist because of our immediate connection to the physical world. The same year a performance of *Inuksuit* at Millennium Park in Chicago, Illinois continued through a substantial rainstorm. The immediacy of the physical environment dictated an experience connected to the means of performance. In describing the event, Arlene and Larry Dunn said, "The stacks of instruments were covered with plastic, tarps and other protective devices in hopes the steady rain would subside."[82] Figure 13 is an image taken by Larry Dunn at the August performance of *Inuksuit*.

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[82] Arlene & Larry Dunn, "A Rain-Soaked Inuksuit in Chicago Millennium Park," Text, I Care If You Listen, August 30, 2012, World, https://www.icareifyoulisten.com/2012/08/rain-soaked-inuksuit-chicago-millennium-park/.

Figure 13. Performance of *Inuksuit* at the 2012 at Millennium Park in Chicago, Illinois.

Author Timothy Morton discusses the impact of environmental art in his text *The Ecological Thought*. As mentioned at the beginning of this chapter, Morton contends that "Ecological art, and the ecological-ness of all art isn't just about something (trees, mountains, animals, pollution, and so forth). Ecological art *is* something, or maybe it *does* something."[83] Morton's assertion that ecological art is or does something is exemplified through the physical environment in the performance of both compositions. Because Adams is interested in the creation of musical soundscapes over landscapes, this allows the performance location to dictate its own experience for performance. And while

[83] Morton, *The Ecological Thought*, 11.

a performance of *Inuksuit* and *Auksalaq* should certainly be executed with regards to the physical safety of the performers and listeners, the intense ecological connection created between the music and the immediacy of the listeners' and performers' physical surroundings exemplifies the unique connections these compositions have to the surrounding environment.

Morton also contends, "Studying art provides a platform, because the environment is partly a matter of *perception*. Artforms have something to tell us about the environment, because they make us question reality."[84] When placed within a virtual space, *Auksalaq*'s virtual environment alters a listener's perception of their own physical environment. This is demonstrated by considering Burtner's remediation of the changing Arctic regions of Alaska and Canada through ecoacoustics. A listener's perception of embodied and disembodied space and place is further questioned by the addition of telematics. Morton's claim that artforms inform us about the environment by making us question reality is exemplified through Burtner's use of telematics. As an everyday listener and observer, we constantly come in contact with different streams of information. We also have the immediacy of the internet and immediate access to information. In *Auksalaq*, the telematic experience presents streams of information and musical material through the use of remediation. Burtner's telematic opera synthesizes different streams of information, including musical material, to make listeners question their own virtual and physical spaces.

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[84] Ibid., 7.

Conclusion

This discussion examined two compositions that challenge traditional expectations of physical and virtual space through an examination of performers' and listeners' natural environments. *Auksalaq* utilizes remote performance locations connected through the use of telematics, while listeners and performers of *Inuksuit* interact with the physical space of their surroundings by exploring different site-specific performance locations. *Inuksuit* reveals the importance of gesture and the creation of difference in a physical environment, while listeners and performers of *Auksalaq* generated content for the opera that was shared telematically through separate performance locations. The physical performance space of both compositions has the potential to inform both performers and listeners during a performance. Inclement weather can change performance arrangements for *Inuksuit*, and in the case of *Auksalaq*, completely alter the course of a performance. To what extent can performers, composers, and listeners include the natural environment as a performer in compositions that focus on physical and virtual spaces? And in doing so, how can they create an experience that informs the participants of their physical presence in different realizations of physical and virtual environments?

Chapter 2: Source Material Collaboration, Artists' Voices: Third Coast Percussion and Devonté Hynes, Sō Percussion and Bryce Dessner.

Introduction

In this chapter, I examine two different case studies of compositions that involve contemporary music ensembles and composers navigating the roles of performer, composer, and arranger/orchestrater. Third Coast Percussion's recent work with Devonté Hynes resulted in a collection of three works for percussion, *For All Its Fury*, *Perfectly Voiceless*, and *There Was Nothing*. Sō Percussion's recent work with Bryce Dessner resulted in the creation of *Music for Wood and Strings*. With these case studies, we can examine two collaborations that are directly influenced by the circulation of source material between the performing groups and composers. The first case study includes MIDI instruments, notation, and the task of orchestration, while the second case study involves the creation of a new musical instrument for performance. How do performing ensembles and composers who are exploring new avenues for expression navigate the roles of performer, composer, and orchestrater? How are the composer's voice and artistic vision retained throughout the arrangement of a composition? Drawing upon interviews and analysis, I attempt to reveal that these musical collaborations exemplify a thoughtful balance and navigation between the aforementioned roles.

Third Coast Percussion is a Chicago-based percussion ensemble founded in 2005, currently comprised of members David Skidmore, Robert Dillon, Peter Martin, and Sean Connors. The ensemble has commissioned an extensive list of works for percussion ensemble, ranging from globally known to rising composers. Regarding commissions,

their website states, "Commissioning new musical works can be – and should be – as collaborative as any other artistic partnership."[85] The partnership between composers and Third Coast is a pivotal component in the early stages of the collaborative process. To share these experiences, Third Coast retains an active presence on social media platforms. The exposure generated from these interactions with new audiences give visitors a perspective of the ensemble's work. For the group, it allows them, "...to bring music that we love to everyone... to expand it to as many different audiences as we can through posts and recordings."[86] The musical collaboration between Third Coast and Hynes was supported in part by an award from the National Endowment for the Arts, Leslie Maheras, the Third Coast Percussion New Works Fund, and the Elizabeth F. Cheney Foundation.[87]

Sō Percussion is an American percussion quartet based in New York and is comprised of members Eric Cha-Beach, Josh Quillen, Adam Sliwinski, and Jason Treuting. The ensemble has contributed a substantial amount of newly commissioned compositions to the chamber percussion repertoire. Notable collaborations include Paul Lansky, Julia Wolfe, Glenn Kotche, David Lang, Steve Mackey, Caroline Shaw, and Dan Trueman. Sō Percussion retains an international presence and are frequently invited guests to collegiate universities. Their concerts feature works of contemporary percussion music that are considered part of the standard canon, but also feature compositions that

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[85] "Ensemble," Third Coast Percussion, accessed December 3, 2019, http://thirdcoastpercussion.com/about-us/ensemble/.
[86] Sean Connors, correspondence with the author, September 2, 2019.
[87] Third Coast Percussion, *Fields* (Cedille Records, 2019).

expand the boundaries of Western art music. Sō Percussion also has theatrical programs in which they create music about place, described as "...a city, our immediate sonic environment, even how the past resonates where we are today."[88] This is also exemplified through their mission and vision statement,

> Sō Percussion is a percussion-based music organization that creates and presents new collaborative works to adventurous and curious audiences and educational initiatives to engaged students, while providing meaningful service to its communities, in order to exemplify the power of music to unite people and forge deep social bonds… (our vision is) to create a new model of egalitarian artistic collaboration that respects history, champions innovation and curiosity, and creates an essential social bond through service to our audiences and our communities.[89]

This chapter will focus on the chordstick, a unique instrument created for the performance of *Music for Wood and Strings*. The project was commissioned by Carnegie Hall and premiered by Sō Percussion at Carnegie Hall on November 23, 2013.[90]

In his text, *Instruments for New Music: Sound, Technology, and Modernism* (2016), Thomas Patteson outlines the technological development of electronic and avant-garde music focusing on musical objects related to Western classical music. Patteson cites the works of innovative composers of Western classical music, ranging from Ferruccio Busoni's *Sketch of a New Aesthetic of Music* (1902), to Luigi Russolo's denouncement of the orchestra in his Futurist Manifesto titled *The Art of Noises* (1913).

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[88] "Sō Percussion," About Sō, accessed October 15, 2016, https://sopercussion.com/about/.
[89] Ibid.
[90] "Bryce Dessner," Bryce Dessner, accessed June 12, 2020, http://www.brycedessner.com/.

Russolo argues, "We must break at all cost from this restrictive circle of pure sounds and conquer the infinite variety of noise-sounds."[91] Patteson argues that instruments have two functions; they create sounds and, "...forge connections to aesthetic, social, and metaphysical realities that give sound meaning."[92] While Patteson's project is largely focused on the history of electronic music, it is also related to the field of percussion because of the timbral possibilities available to both percussion and electronically generated sounds. Electronic music and synthesized sounds were attractive to early composers of contemporary music because of the limitless timbral possibilities made possible by oscillators. Early experimentations with electroacoustic sounds and percussion were attractive to some composers. For example, in his composition *Kontakte* (1958–60), Karlheinz Stockhausen uses four-channel electric tape, piano, and percussion. These limitless possibilities with electronic music were recognized by Patterson, who states, "The history of instruments, when properly told, concerns not just the objects themselves but also what they promise, portend, and make possible."[93]

In his 2012 article titled "The Social Life of Musical Instruments," ethnomusicologist Elliot Bates argues that scholars should consider the complex systems of interconnectivity between instruments, performers, and listeners. Bates asks that we specifically consider, "...a paradigm that encompasses the full range of possible human-object-divine relations, as seen in instrument making, performance, musical healing, and

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[91] Luigi Russolo, *The Art of Noises*, trans. Robert Filliou, Great Bear Pamphlet (Something Else Press, 1967).
[92] Thomas Patteson, *Instruments for New Music: Sound Technology and Modernism* (Oakland, California: University of California Press, 2016), 3.
[93] Patteson, 4.

numerous other domains."[94] He also discusses approaches in object-oriented studies, referencing Bruno Latour's "actor-network theory," as well as Jane Bennett's "thing-power."[95] For the case studies discussed in this chapter, source material acts as the implement for creation and collaboration.

Third Coast Percussion, Devonté Hynes, *For All Its Fury* and *Perfectly Voiceless*

In October 2019, the contemporary music quartet Third Coast Percussion released *Fields*, an album featuring percussion music written by Devonté Hynes. Hynes is an English singer, songwriter, multi-instrumentalist, producer, and director. His first musical project was a folk group titled Lightspeed Champion. His most recent project, Blood Orange, combines elements of R&B, funk, hip-hop, and electronica. Blood Orange has released five albums, *Costal Grooves* (2011), *Cupid Deluxe* (2013), *Freetown Sound* (2016), *Negro Swan* (2018), and *Angel's Pulse* (2019). Hynes also has an extensive career working as a collaborator with recording artists in different genres. Notable collaborations include Solange's "Losing You" (2012), Tinashe's *Aquarius* (2014), FKA Twigs' *LP1* (2014), and Jessie Ware's *Tough Love* (2014)[96]. Hynes also collaborates with other artists on his own studio albums. His most recent full-length record *Angel's Pulse* features musical artists Toro y Moi, Kelsey Lu, Justine Sky, and Arca.[97]

Hynes has a background in classical music, but this composition is his first collaboration featuring music written solely for percussion. In 2017, Hynes was a

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[94] Bates, "The Social Life of Musical Instruments," *Ethnomusicology* 56, no. 3 (2012): 363.
[95] Bates, 372–73.
[96] "Timeline: A Decade of Dev Hynes Collaborations," Genius, accessed October 31, 2019, https://genius.com/a/timeline-a-decade-of-dev-hynes-collaborations.
[97] Blood Orange, *Angels Pulse* (Domino, 2019).

featured performer at Kennedy Center, performing four of Glass' *20 Etudes for Solo Piano*.[98] In an interview between Hynes and Glass, Hynes states,

> I first heard Phillip's music because I'd go to Virgin megastores and just buy up stacks of CDs based on artwork. I saw the artwork to Glassworks and just bought it without even thinking, you know, who knows what it could be. I was so blown away, and then after that just wanted to find more. And from then on, I would seek stuff out and listen.[99]

Glass' influence as a composer in the realms of classical and contemporary pop music are also examined by Hynes, stating that Glass' music, "…has crossed boundaries to the point where its classical music but its wider than that, its maybe even pop to some degree."[100] Hynes raises an interesting observation. Both composers have interesting intersections between the genres of pop and classical. Glass began as a composer of contemporary classical music. Gradually, his influence became adopted into the popular subgenres of minimalism and ambient music. Hynes' recent venture into composing classical music and scoring films comes after a decade of work as a multi-instrumentalist in the realms of popular music.

To examine Third Coast Percussion's collaboration with Devonté Hynes one must first examine the ensemble's relationship with Chicago's Hubbard Street Dance. Hubbard Street has had a historically fruitful relationship with Third Coast. The two groups first

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[98] "Philip Glass 20 Etudes: A 5-Pianist Performance with Philip Glass, Jason Moran, Aaron Diehl, Devonté Hynes, and Jenny Lin - The John F. Kennedy Center for the Performing Arts," accessed October 17, 2019, https://www.kennedy-center.org/calendar/event/MSNMG#tickets.
[99] "Devonté Hynes And Philip Glass Compare Notes - YouTube," accessed October 31, 2019, https://www.youtube.com/watch?v=7PTzbz6layI.
[100] Ibid.

collaborated on a Hubbard Street program featuring the work of world-renowned choreographer Jiří Kylián. The performance featured the piece *Falling Angels* set to *Steve Reich's Drumming Part I* (1970–71), of which Third Coast was the performing ensemble. In an interview with Hubbard Street, Third Coast member David Skidmore elaborates that Hubbard Street is an "…organization of incredible people dedicated to the highest artistic standards, and their work sits right at that crucial balance of entertaining and thought-provoking... right away we started hinting at the idea of a bigger project together."[101] The bigger project mentioned by Skidmore would become a collaboration between Third Coast, Hubbard Street Dance, Emma Portner, Devonté Hynes, as well as dance choreographers Jon Boogz and Lil Buck, the co-founders of Movement Art Is (MAI).

Emma Portner has a history collaborating with Devonté Hynes. In 2017, Hynes released a longform video featuring three of his songs from the album *Freetown Sound* (2016), which feature choreography by Portner.[102] Portner initially suggested the collaboration with Hynes to Third Coast. During a conversation with Third Coast member Sean Connors, he states,

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[101] "Three Cheers for Third Coast Percussion," Hubbard Street Dance Chicago, accessed July 25, 2019, https://www.hubbardstreetdance.com/about-us/blg/three-cheers-for-third-coast-percussion/.
[102] Alex Robert Ross, "Watch an Exhaustingly Beautiful Longform Video from Blood Orange, Featuring 'Freetown Sound' Tracks," *Vice* (blog), March 24, 2017, www.shorturl.at/lsGHU.

> Emma put us in contact with Devonté (Dev) and his manager. Dev was really excited about composing music that was going to be performed by someone else. He usually works in a collaborative setting and writes his own music. He's got Blood Orange, where he's the performer and writes all the music. But this was going to be very different. There was never going to be a circumstance where Dev would tour with us or be one of the musicians. It was going to be 100% for percussion.[103]

Third Coast met Hynes at their Chicago studio space to demonstrate some sonic possibilities with percussion instruments. This meeting is considered a fundamental element in Third Coast's process of collaboration. Connors stresses this point by stating,

> We really understand our instruments, and we've commissioned a lot of music... We really do believe that it's better for everybody if we're involved as much as the composer is comfortable with from the very beginning. We insist on physical workshops in the same room, trying out stuff together. So that's our new internal rule, we just go through with a series of workshopping with composers.[104]

To generate musical content for the composition, Third Coast suggested that the best way to collaborate would be for Hynes to come up with musical content, or source material. The material included musical ideas such as melodies, harmonies, or overarching themes. After the source material was composed, Third Coast would then arrange and orchestrate the material for their instruments. One of the benefits to this approach is that Third Coast would be able to arrange the material to fit on their own collection of instruments. What is particularly interesting about the collaboration is the way in which music was sent to the ensemble.

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[103] Connors, correspondence with the author. September 2, 2019.
[104] Ibid.

Hynes composed all of the music for the commission in the digital audio workstation (DAW) Logic Pro X. Hynes created synthesizer sounds in the DAW, paring it with MIDI vibraphone sounds. Connors elaborates, "...almost everything was, and if you listen to Blood Orange, uniquely Dev… warm and lush."[105] Hynes used imagery to draw inspiration for the project. He imagined, "an open field; a space in which both the music and dance could play."[106]

The performance with Hubbard Street Dance was divided into three parts. The concert opened with *There Was Nothing*, choreographed by MAI. Then, *Perfectly Voiceless* was performed as an interlude featuring Third Coast. Finally, the program closed with *For All Its Fury*, featuring music choreographed by Portner.[107]

Third Coast first received a collection of MIDI files from Hynes, as well as Logic Pro synthesizer patches and scores. MIDI files, barring some changes, can be processed into Western notation. It should be observed, however, that this is not always a simple process. For example, musical elements such as phrasings, precise rhythms, dynamics, range, and beaming need to be adjusted in a notation software such as Finale or Sibelius. Figure 14 is a selection of the MIDI arrangement from *Perfectly Voiceless* sent to Third Coast from Hynes.[108]

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[105] Ibid.
[106] Third Coast Percussion, *Fields*.
[107] The performance order listed is different from how the compositions appear on the studio album *Fields*.
[108] Excerpt is a small selection of the MIDI arrangement sent to TCP from Hynes, provided to the author by Connors.

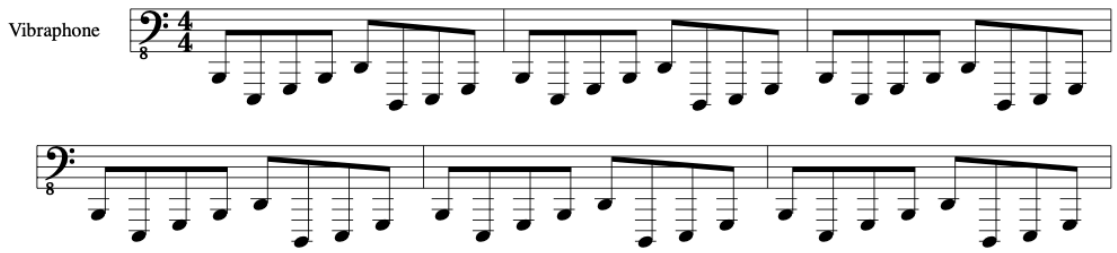

Figure 14. MIDI Vibraphone excerpt from Hynes for *Perfectly Voiceless*.

The figure has elements that must be addressed. First, the overall range of the excerpt would not be able to be performed on a vibraphone. This is most likely due to the MIDI arrangement being exported directly from the DAW. This is compounded by the fact that the excerpt is indicated to be performed an octave below the written bass clef. This figure is important, however, because once it is arranged and orchestrated by Third Coast it will become the predominant motive heard throughout *Perfectly Voiceless*.

The orchestration and arrangement of this music became Third Coast's main focus during their creative retreat at Notre Dame University in South Bend, Indiana. During creative retreats, Third Coast takes the time to work on ensemble matters, such as this transcription project, composing, arranging, or working with new collaborators and composers. The ensemble split the responsibility of transcription up among the four members. Discussing the process, Connors states,

> We said, "Okay, this part sounds similar to this part..." and we had to figure out the form of what Dev gave us. We identified some sections that we were really excited about. And then keeping in mind, this is dance music. Much of this wouldn't flow the same way as concert music. Straight repetition would be welcomed.[109]

The first step in this process was transcribing the score and parts provided by Hynes. This was completed without particular instruments in mind; the goal at the end of this process was to have notes to arrange for their instruments. Third Coast's early transcriptions and arrangements were a challenge for the ensemble to arrange because of the rich and lush synthesizer textures provided by Hynes. Because of these unique sounds and their signature quality of being the composer's voice, the ensemble would eventually incorporate the synthesizer as an instrument in performance. Eventually, the group would reconvene and share sketches of their arrangements for their assigned musical sections. The group would made suggestions to one another, as Connors states, "…someone would be like "that's great, I have an idea, can I add here?" And we would pass it off. There's a bit of musical telephone going on." After receiving feedback from Hynes regarding the composition, much of Third Coast's arrangement stayed the same, while some changes included repetitions in form, instruments, timbres, and the addition of unpitched percussion sounds. Figure 15 is a still from a rehearsal video provided by Third Coast featuring the arranged percussion sounds in *Perfectly Voiceless*.

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[109] Sean Connors, correspondence with the author. September 2, 2019.

Figure 15. Still from rehearsal video of *Perfectly Voiceless.*

The first time I listened to *Perfectly Voiceless*, I was convinced that Hynes arranged the percussion parts for the ensemble. Many of Hynes' compositions as Blood Orange utilize sequenced percussion parts that build and drive the songs. For example, the track "Chosen" from the album Cupid Deluxe opens with a sequenced drum part, then later features a percussive melodic sequence that sounds similar to wooden slats or a set of amglocken.[110] Figure 16 is a transcription of the sequence, occurring at 0:44 in the track. Figure 17 is a transcription of the similar amglocken part from *Perfectly Voiceless*.[111]

[110] Blood Orange, "Chosen," *Cupid Deluxe* (New York City: Domino, 2013).
[111] Third Coast Percussion, "Perfectly Voiceless," *Fields*.

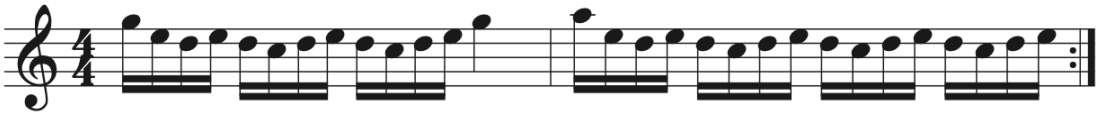

Figure 16. Sequenced melodic instrument from “Chosen.”

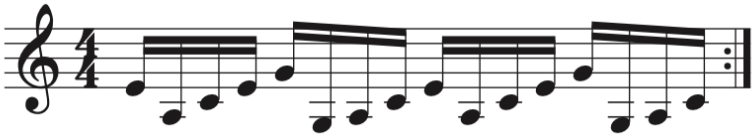

Figure 17. Amglocken transcription from *Perfectly Voiceless*.

Because of the similarity, I was convinced that the selection was arranged for amglocken by Hynes. For example, Figure 17 follows a similar melodic contour to the MIDI vibraphone arrangement sent to Third Coast in Figure 14. However, after talking to Connors, I discovered that the amglocken part was arranged by Third Coast. He states,

> We put the main chordal material on glockenspiel, which changed the character of the section quite a bit just by shifting the timbre, and then we took one of the melodic layers that Dev composed and spread it out over some interesting timbres that typically would be thought of as unpitched... The final step was adding in some "drumlike" parts mainly for the tamborim and cup gong that fit in the same rhythmic world but added groove. The "drum" parts in *Perfectly Voiceless* were not part of the original composition from Dev, they originated by creating different timbral layers and then inserting a groove that we created by a mix of intuition/improvisation/ and looking at the surrounding material.[112]

[112] Sean Connors, correspondence with the author. September 2, 2019.

A similar approach was taken during the arrangement of *For All Its Fury*. Table 5 illustrates the MIDI parts and musical material sent by Hynes to Third Coast, and the instrumental orchestration agreed upon by the ensemble. [113]

Table 5. MIDI arrangement of *For All Its Fury* and the final orchestration by Third Coast Percussion

Movement	**MIDI Arrangement (Hynes)**	**Final Orchestration (TCP)**
Reach	Vibraphone, Synth	Synth, Kalimba, Vibraphone, Crotales
Blur	Synth	Synth, Marimba, Vibraphone, Blown Bottles
Coil	Synth, Vibraphone	Vibraphone, Marimba
Wane	Synth	Marimba, Bass Drum
Curl	Synth, Vibraphone	Gongs, Bass Drum, Synth, Wooden Slats, Vibraphone
Hush	Synth	Hand Chimes, Vibraphone, Prayer Bowls, Synth
Gather	Synth, Vibraphone	Pitched Bottles, Synth, Amglocken, Sequenced Metallic Percussion, Wooden Slats, Wind Chimes, Desk Bells, Glockenspiel, Crotales, Bass Drum, Marimba
Tremble	Synth, Vibraphone	Gongs, Synth, Hand Chimes, Glockenspiel, Vibraphone, Bass Drum
Cradle	Synth	Crotales, Vibraphone, Marimba, Synth
Press	Vibraphone	Vibraphone, Marimba, Sequenced Melodic Percussion
Fields	Synth, Vibraphone	Synth, Bass Drum, Marimba, Vibraphone, Glockenspiel, Desk Bells, Hand Chimes, Crotales

[113] Connors suggested that I emphasize that none of the titles or distinct movements existed during the arrangement process. Third Coast made the decision to break up the piece, *For All Its Fury*, in the manner listed above during the post-production process of recording the studio album. The track titles and movement divisions were decided by the ensemble at the end of the process.

By orchestrating the MIDI arrangements sent to the ensemble, timbral differences are able become more pronounced between the movements. This is especially evident in the movement *Gather*, halfway through the composition. The balance between transcription and retaining the original musical intent of the composer, as well as the integrity of the source material, is a fine balance to achieve by the ensemble. As mentioned earlier, different members of the ensemble would bring sections that they transcribed and arranged for the performance. With this, two different approaches can be observed: (1) negotiating changes to the original source material from Hynes for variation by slightly straying away from the original MIDI arrangement, and (2) adhering to the original material as a means of retaining the closest possible intention of the composer.

Engaging with this process was a beneficial endeavor for the ensemble. Regarding this procedure, Connors states,

> It was the perfect example of what collaboration can yield, in my opinion. It was Dev's idea to begin with, he came up with this great source material. It's coming from somewhere else, and then as performers we got to really put our thumbprint on it too. Given the constraints of staying true to Dev's voice and trying to make it sound like something that works on our instruments.[114]

The source material, being the MIDI arrangement and synth sounds, were retained as the crucial voice of the composer. Many of Hynes' compositions as Blood Orange feature the lush sounds of his synthesizer. By including the synthesizer in performance, and not

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[114] Ibid.

arranging the timbres of the synthesizer for percussion instruments, the ensemble is able to capture a unique aspect of Hynes' voice as a composer.

The next case study focuses on Sō Percussion's collaboration with composer Bryce Dessner and the creation of the chordstick, a unique musical instrument created for the performance of *Music for Wood and Strings*. In this case study, the source material for performance and composition is tied to the instrument created for performance. This investigation will focus on the creation of the musical object for performance.

Sō Percussion and Bryce Dessner

In 2013, Sō Percussion released a recording of *Music for Wood and Strings*, a thirty-four-minute composition featuring the ensemble performing on chordsticks, a unique musical instrument built specifically for the composition. The chordstick was created as a collaboration between Bryce Dessner and Aron Sanchez, owner of Polyphonic Workshop. This section investigates the conception of the instrument and the ensemble's approach to performing the composition on a new musical instrument. Similar to Hynes' use of the synthesizer, the chordstick retains Dessner's voice as a composer and popular musician.

Bryce Dessner is an American composer and instrumentalist well known for his work in the Cincinnati, Ohio based rock band The National. As a classically trained guitarist and composer, Dessner's musical endeavors led him to collaborations with composers such as Steve Reich, Phillip Glass, and David Lang as well as popular musicians, including Justin Vernon of the group Bon Iver, and Johnny Greenwood of

Radiohead.[115] His experiences in both classical and rock music translate to his work as a composer of contemporary classical music. Dessner has one composition written for solo percussion titled *Tromp Miniature*, written for the International Tromp Percussion Competition of 2014.

Aron Sanchez is an instrument fabricator based out of Brooklyn, New York. He frequently performs with his own group; the musical duo Buke and Gase. The duo creates its unique sound through different instruments built by Sanchez. These instruments include custom built amplifiers and other hybrid and nontraditional guitars and percussion instruments. Discussing his instruments, Sanchez acknowledges the strange territories one must cross into in order to create new musical instruments for performance. He states,

> A lot of the things that you can do with physics and sound have been done already, but I guess I like reinventing the wheel. Just seeing how far I can push the limits of what's possible. And there's always times where you think of something that hasn't been made. Maybe its slightly different then something that already exists, but you need it to do something a little bit different, so you make it.[116]

The creation of a new musical object for performance brings a set of challenges, such as performance practice and musical notation. The piece is a exemplary example of what can be achieved through source material collaboration.

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[115] "Bryce Dessner," Music Sales Classical, accessed October 30, 2016, http://www.musicsalesclassical.com/composer/long-bio/bryce-dessner.
[116] "Buke and Gase: Handcrafted Instruments, Throttling Sound," All Things Considered, NPR, December 27, 2010.

Music for Wood and Strings, The Chordstick

Dessner and Sō Percussion's collaboration came to fruition at the Acadia Summer Arts Program in Bar Harbor, Maine, also known as "Kamp Kippy."[117] Dessner wanted to compose a piece for the ensemble that focuses on the idea of hocketing rhythms. For a percussionist, this practice is common to much of the contemporary percussion repertoire. A hocket is created by interlocking different patterns of rhythms. When this technique is combined with melodies, composers can create unique melodic variations. For example, the music of Steve Reich relies heavily on the concept of hocketing rhythms. Reich's *Music for 18 Musicians* (1976) relies on a perpetual hocketing figure that is traded throughout different instrumental groups. Similarly, *Music for Pieces of Wood* (1973) features five performers slowly building hocketing rhythms on tuned claves. The title of Dessner's composition, *Music for Wood and Strings*, is a nod to some of Reich's compositions.

Dessner relayed ideas for the instrument to Aron Sanchez, owner of the Polyphonic Workshop. Sanchez worked on a prototype instrument for Sō Percussion and Dessner. The prototype would be very similar to the final version, with the inclusion of three other chordsticks. Dessner and Sō Percussion's experiments and improvisations with the instrument provided inspiration for the composition. Discussing the ensemble's initial experience with the instrument, Sō Percussion member Josh Quillen states,

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[117] The narrative has been constructed using Dacia Clay's interview with Dessner and Sō Percussion, as well as a personal correspondence with Sō Percussion member Josh Quillen.

> We managed to get enough of us improvising with rhythms that we could hocket. There were two chords tuned on one chordstick, so we would each... with two of us on each chordstick, improvise with muting and muffling... He (Dessner) taught us a bit of strumming, other very simple ideas... like if you go halfway between on a harmonic, you can do the octave above... or here's what it sounds like when I'm strumming the instrument.[118]

The collaborative explorations with the instrument involving Dessner and Sō Percussion resulted in the techniques and performance practice that would be included in the composition. Figure 18 is the opening hocketing section of the composition.[119]

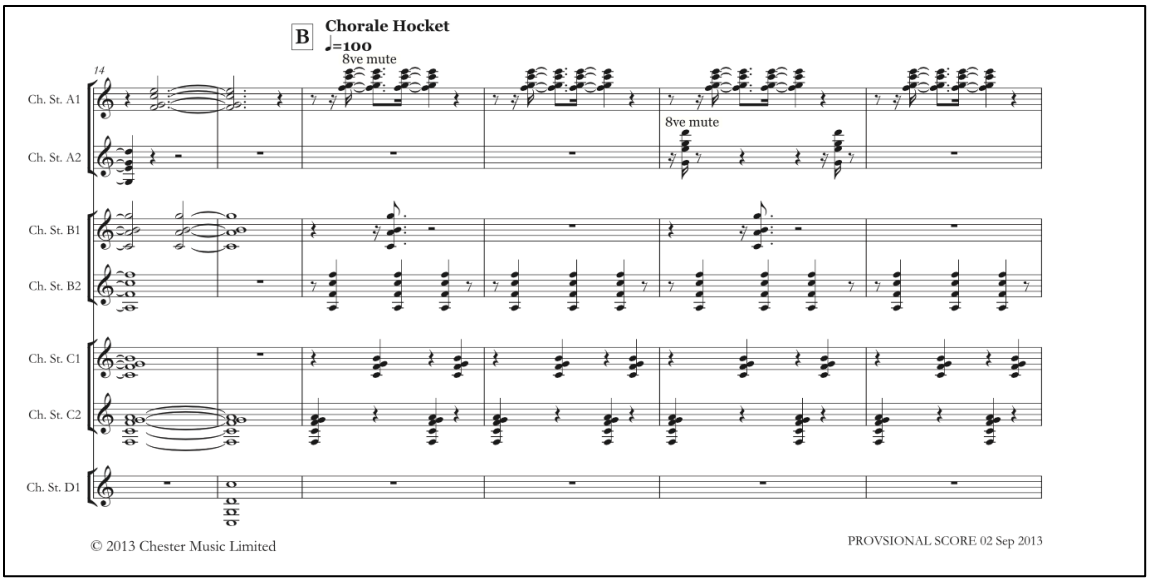

Figure 18. Opening hocket section of *Music for Wood and Strings* performed on the chordsticks.

In the excerpt above, the four different instruments refer to the four separate chordsticks, including two alto voices, tenor, and a bass. Each chordstick can perform on two different sets of pretuned chords during performance. This is indicated by the different staves for

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[118] Josh Quillen, correspondence with the author, May 22, 2020.
[119] Bryce Dessner, *Music for Wood and Strings*, score (Chester Music, 2013).

each instrument. The exception to this is the bass voice of Player 4, who is able to play two sets of chords as well as a chromatic bass line. The excerpt above features muting, but other performance techniques include bowing, applying pressure for overtones, col legno, tremolos, and plucked strings. The instrumentation also includes woodblocks, snare drum, and bass drum.

The instrument was designed by Sanchez to withstand all of the previous performance techniques while being amplified. This instrument draws inspiration from the Appalachian hammered dulcimer and the electric guitar. Figure 19 is an example of the Appalachian hammered dulcimer,[120] and Figure 20 is a photo of the chordsticks.[121]

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[120] "Hammer Dulcimer History and Playing," Smithsonian Institution, accessed June 19, 2020, https://www.si.edu/spotlight/hammered-dulcimer/history.
[121] "Polyphonic Workshop," accessed July 8, 2020, http://www.polyphonicworkshop.com/.

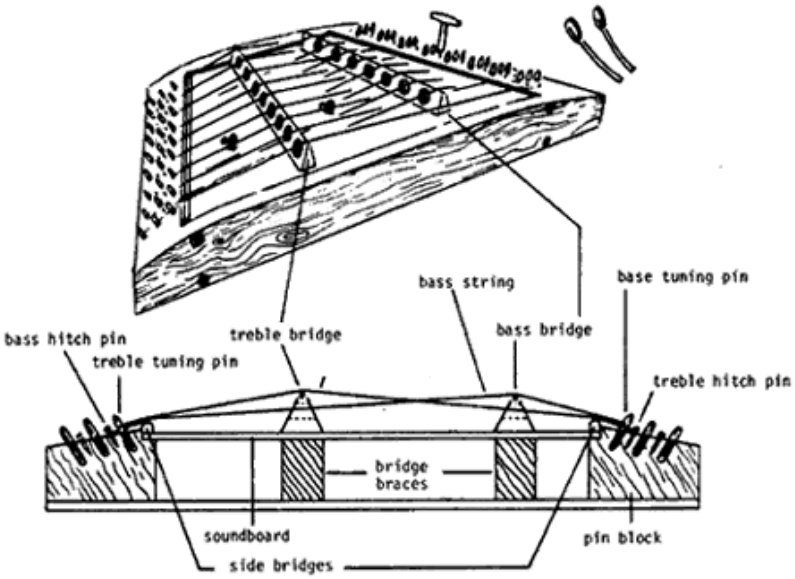

Figure 19. Appalachian hammered dulcimer.

Figure 20. Chordsticks.

Bryce's inspiration to create a new musical instrument came from viewing Sō Percussion's performance of David Lang's *So-Called Laws of Nature* (2002). Dessner's intention was to create a pure sound through a simple instrument, while paying homage to his previous training as a classical guitarist. He conceived of the chordstick as a hammered dulcimer, but with the amplification and warm characteristic tone of a guitar. In discussing the challenges and approaches to performing on the instrument, Quillen states,

> It's a different tactile and visceral feeling than it is, say... playing a marimba. The way you have to anticipate certain notes, or just the noise that the stick makes as you hit it. The artifact of playing that instrument... how to manage that and use it to your advantage... like bending up and getting a little portamento, that sort of thing I had to learn how to do.[122]

The chordsticks are custom built, allowing Dessner to receive instruments built for specific voice ranges. This means that the instruments would not have to be tuned to pitches beyond their range, resulting in a clearer and cleaner tone from each string.

Conclusion, Collaboration and Facilitation

By comparing both case studies, Sō Percussion's experience with Sanchez and Dessner, and Third Coast's experience with Hynes, we can better understand how these compositions came to fruition. Perhaps the most salient point is that the ensembles acted as facilitators for new musical directions. Third Coast's meticulous arrangement and inclusion of elements considered unique to Hynes retained the composers voice through

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[122] Josh Quillen, correspondence with the author, May 22, 2020.

the use of percussion instruments. Sō Percussion's exploration of new sound worlds through the creation of a new musical instrument for performance involved the collaboration between three different parties. Aron Sanchez elaborates on the creation, stating,

> I love working with my hands and fabricating high quality functional objects or instruments that people can create with. Thinking about how people interact with a tool or thing, ergonomically... inspirationally... is really satisfying and exciting. I love problem solving and the challenge of creating something new.[123]

The challenge of creating a string instrument capable of being performed by a percussion ensemble became the catalyst for a new approach to performance. The ensemble and Dessner realized the instrument's potential through workshops and improvisation sessions, allowing him to compose music for the new instrument. The ensembles involved in these case studies acted as collaborators and facilitators of the creative ideas and processes explored by the composers with the intention of creating new music for percussion ensemble.

Chapter 3 of this dissertation explores a personal case study of both collaboration and facilitation. In doing so, scholars will notice new methods of ethnography for documenting and sharing the collaborative process. Individuals interested in new musical collaborations can examine not only the composition, but also the process of collaboration and performance practice related to the piece.

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[123] Aron Sanchez, correspondence with the author, July 3, 2020.

Chapter 3: *Resonance, in Three Movements*: A Collaborative Composition with Randall Taylor

Introduction

This chapter explores a personal case study of collaboration with Randall Taylor, well known for his work as Amulets. It explores two related questions about the collaborative process: (1) How do artists and performers document the process of commissioning a new musical composition? (2) How might scholars and performers create new approaches to ethnographic research that is accessible to interdisciplinary researchers from different backgrounds of study? Undoubtedly, the process of collaboration varies among artists and performers. This depends on what is needed for the project; some artists will have different compositional processes, approaches, and backgrounds that must be navigated by the performers. How might artists and composers document this process for scholars to examine and discuss in future projects? Furthermore, what might a case study in collaboration yield that can be examined by artists, performers, and scholars interested in different facets of the process?

It is important for this discussion to define the specific titles I use for the different members of this project. When referring to the scholar-artist, I am referring to myself. I am the performer, arranger, and ethnographer of the commission. When referring to the artist, I am referring to Taylor, the composer of the commission. These titles should not limit our discussion or narrow the scope to exclude individuals interested in collaboration. For example, an artist may refer to individuals working with different mediums. What might a collaboration with a sculptor, engineer, or a photographer yield?

And how might we document these projects? I am encouraging artists and scholar-artists who engage in projects similar to this commission to examine the ways that their research can be documented to encourage new directions in the process of collaboration. In this case study, my work as a scholar-artist blurs the lines between performer, arranger, composer, and ethnographer. In Taylor's case, the artist blurs the lines between disembodied performer, composer, and arranger.

This case study involves a number of sampled and resampled source material sounds that will become the crux of the final composition. What approaches to ethnography might scholar-artists take to capture unique approaches to distanced collaboration? One reason that artists and performers do not investigate this approach is because this type of ethnography has not been codified. The following case study proposes approaches to documentation that include charts, images, and screenshots of the different stages of the project's development. I argue that these approaches are necessary to revitalize the methodology of discussing collaboration. What follows is not a prescriptive approach, but rather the examination of a project that scholar-artists and academics interested in the process of collaboration might consider for their own research purposes.

This chapter focuses on my collaboration with Portland, Oregon based audio and visual artist Randall Taylor. Taylor is known for his ambient solo work as the performing force Amulets. My intention was to commission a musical composition from a composer (artist) with little to no background in contemporary percussion music. I approached the commission with Taylor by drawing inspiration from Third Coast's commission from

Hynes. I wanted the artist (composer) to have an opportunity to explore different sonic possibilities through percussion instruments. Undoubtedly, this approach has been well established by percussion groups and solo artists and has contributed a large portion of contemporary solo and chamber music in percussion. In fact, many of these compositions have become part of the standard canon. However, the individuals involved have not suggested dynamic new approaches to ethnography or discussing facets of performance practice when documenting their experiences. What will the new generation of collaborations between scholar-artists and composers yield for the greater canon of Western art music?

Background

I discovered Taylor's work as Amulets through the social media platform Instagram. Taylor frequently posts videos and music to the platform. His content reaches a staggering thirty-three thousand followers. Taylor uses handmade cassette tape loops, cassette players, and prerecorded musical material to create his compositions. In describing his work as Amulets, He writes, "Through the recontextualization of cassettes, sampling, field recording, and looping, these long-form compositions blur the genres of ambient, drone, noise, and electronic music."[124] He also had installations featured at different art galleries, including Variform[125] in Portland, Oregon, and Dimension Gallery[126] in Austin, Texas. Taylor also refurbishes and circuit bends cassette players. I

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[124] "Amulets | About," accessed October 3, 2019, http://www.amuletsmusic.com/about.html.
[125] Parallels // Extended Tape Loop Sound Installation, http://www.amuletsmusic.com/parallels.html
[126] Infinity X Loop // Cassette Tape Loop Sound Art Installation, http://www.amuletsmusic.com/dimension-gallery-sound-art-installation.html

contacted Taylor through his website regarding the commission and communicated through email. After agreeing to the project, I described the aim of this dissertation and how I imagined his work will engage with it. We agreed upon a three-movement composition for cassette tape loops, guitar effect pedals, and improvised percussion. Before discussing the project, I had no background information about Taylor's experience with percussion music.

This chapter examines the collaborative processes involved in commissioning and performing a new musical work for electroacoustic percussion instruments and four-track cassette recorder. Performers interested in this case study will find information regarding the early processes of commissioning, the fine balance involved in the interpretation and representation of an artist's creative voice, as well as new approaches to generate musical material. Scholars interested in this case study will observe new approaches to ethnography involving the commission of a musical work, as well as a plethora of different charts, photos, and tables analyzing the composition. Artists interested in the case study can examine how the project came to fruition, the negotiation of ideas and views, and an insight to the interpretative processes involved from a performer's perspective. This chapter also integrates theories and topics discussed in Chapter 1 and 2 regarding space and source material collaboration.

Planning and Correspondence

This collaboration was made possible by funding from the I. Hollis Parry/Ann Billman Project Development Award at Ohio University. The initial application for the project was to involve one of two artists; either composer Tyler Gilmore, also known as

BlankFor.ms, or Taylor. The two artist I selected were discovered through the social media platform Instagram. Both Gilmore and Taylor maintain an active presence on the platform, constantly contributing new videos. The initial proposal requested funding to commission a new musical work involving percussion and cassette tape loops.

After receiving funding, I emailed the artists asking if they were interested in the project. After obtaining an email confirmation from both artists, I faced the dilemma of selecting only one for the project. Leaving the decision to chance, I flipped a coin, resulting in the selection of Taylor as the commissioned artist. Although this may seem trivial, the relatively simple process removed the burden of selection between the two composers.

My initial email with Taylor proposed the idea of a "small mixed chamber percussion ensemble, preferably with tape and percussion instruments."[127] As I considered the timbral possibilities available to a percussionist, I felt necessary to provide the artist with more direction regarding my vision of the composition. I wrote to Taylor, "I was imagining a small percussion chamber ensemble, preferably pitched percussion instruments such as small bells, metals, bowed textures, and perhaps drums for added texture and depth. However, I can also see this working with one performer and Ableton Live providing back-up textures and live audio manipulations."[128]

As a performer, I have experience working with electroacoustic instruments and wanted to see if Taylor was interested in blending our different performance worlds.

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[127] Randall Taylor, correspondence with the author, September 3, 2019.
[128] Ibid.

Taylor's live shows as Amulets do not involve digital performance components, such as computers or sequencers. Part of his aim as an artist it to create sound worlds that rely on little to no digital hardware in performance. This is not to say his approach is strictly analog. His cassette tape loops and live guitar are processed through a variety of effect pedals, of which utilize digital and analog signal processing. This is undoubtedly a departure from my approach as a performer and improviser. My performances and improvisations rely on electroacoustic manipulations inside of the DAW Ableton Live. Ableton Live can control digital audio effects and run automations that can change at specific moments during a performance. I wanted to see if Taylor would be interested in combining our different backgrounds as performers for this new project.

After discussing a proposed timeline for the project, Taylor sent specific questions to me regarding the beginning aspects of the composition.[129] Many of these questions added direction to the early stages of the project. Table 6 is a brief correspondence answering his questions.

[129] Ibid.

Table 6. Questions during email correspondence with Taylor

Randall Taylor (RT):	"I am assisting in the creation of your composition, and you would like percussive instruments recorded to tape loops and you would like those physical tape loops sent to you for the live performance?"
Ryan Harrison (RH):	"I see this as more of a joint composition. I welcome the idea of recording percussion instruments (bells, metal instruments, wooden instruments) but I am not bound to this… I do envision live percussive elements with the cassette tapes… [and] I am extremely interested in your MVS-1. How would you feel about working this unit into the composition? Perhaps adjusting the tape loop mid-performance could add some variation? What do you think about this?"
RT:	"Do you have tape players to play the tape loops, and will these be standard tape loops or 4 track tape loops?"
RH:	"I own a TASCAM Ministudio Porta Two. If you are interested, I am able to purchase additional tape players necessary, or pay you for any that you have modified/created for the performance."
RT:	"My standard handmade tape loops are 5-10 seconds, anything longer would have to be special ordered, these can range from 1 to 10 min loops I believe."
RH:	"Absolutely. And as I mentioned earlier, we can also do tapes that are not loops. I believe that this may help with the "length" aspect. That is, if you're still comfortable with this being within the price point of the commission."
RT:	"What other compositional ideas would you like me to help with?"
RH:	"I would love to leave this up to you. Perhaps we can agree on the template for the composition, bounce ideas back and forth, and then go from there. I want to leave the melodic/harmonic elements up to you. I was thinking a three-movement composition would be nice. I would like for the changes between movements to be rather seamless."

My responses to these questions clarified specific details for Taylor, but I still felt that he did not have enough background information regarding my creative project and the way it fits into the larger creative scope of this dissertation. I decided to also provide small "abstracts" of my proposed chapters, as well as artists and areas of research that I

am interested in as a performer. Taylor suggested a Skype correspondence for us discuss our backgrounds and visions with the composition.[130]

We addressed different areas during our first correspondence involving our backgrounds and inspirations. The main topic of the first correspondence was deciding our vision for the project, the instrumentation for performance, and how we will approach creating source material. We decided that I would provide recorded source material for Taylor to work with. He would use the same processes that he implements as Amulets to alter the source material and then send it back to me for the performance.

I offered to provide videos of myself performing on different instruments and creating different sounds, but Taylor suggested that I should just send the source material over as recorded audio files. He stated, "Anything that you want to send over... I think that I can start working with. Then we can start thinking about places and how they fit in the composition of the piece."[131] This chapter contains a section that discusses the recording process of the source material. The index of this dissertation contains a chart illustrating the different samples sent to Taylor.[132]

After our first correspondence, we needed to establish what musical instruments, recording equipment, and effects we have to work with. This is important because these would be the tools that we use to manipulate and sample the recorded source material.

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[130] Transcripts of both correspondences can be found in the index of this dissertation.
[131] Randall Taylor, correspondence with the author, September 18, 2019.
[132] Readers interested in listening to the recorded source material are invited to contact the author.

Taylor sent the following list of equipment in his studio, and I responded with my own.[133] Table 7 is a list of this equipment.

Table 7. Taylor and Harrison's list of equipment.

Randall Taylor's Equipment	**Ryan Harrison's Equipment**
Pedals TC Electronic Ditto X2 Looper Strymon BlueSky Reverberator DigiTech Digidelay Digital Delay Electro-Harmonix Big Muff Dunlop DVP4 Volume (X) Mini Zoom MS-50G MultiStomp Multi-Effects **Cassette** GE Microcassette Recorder Marantz PMD 221 American Printing House Tape Recorder Tascam 414 MKII 4-Track Tascam Porta 02 MKII **Keyboards** Teenage Engineering OP-1 Portable Synthesizer Yamaha VSS-30 Korg Volca Keys	**Recording Devices** Sure SM57 Dynamic Microphones (4) Blue Baby Bottle Condenser Microphone Ableton Live 10 Suite, MAX/MSP Sound Toys VSTs Focusrite Scarlett 18i20 Audio Interface **MIDI/Keyboards** Ableton Push Tascam Porta 02 Ministudio AKAI MPK 49 MIDI Keyboard Korg Volca Keys **Cassette** Tascam Porta 02 Ministudio 4-Track American Printing House Tape Recorder **Percussion** Drums, Cymbals, Keyboards, Piano

There is a rather large difference between the number of pedals and cassette devices that Taylor uses and my own collection. Taylor's setup features a collection of guitar pedals; a reflection of his work as Amulets. My own collection relies on digital electroacoustic processing. This is because my instruments involve processing sounds that run directly into Ableton Live. While we may have similar approaches to how we create and record

[133] Ibid.

sounds, the processes we use to achieve our final sounds vary. It should also be noted that at this point in the collaboration we still did not have a final instrumentation for the composition. I intentionally made this decision because I wanted to see how Taylor would manipulate the original source material before making any final decisions. My reason for this was to have the opportunity to select timbres and instruments that complement or contrast the sampled source material.

Initially, we planned on connecting microphones to the four-track cassette recorder. In an email correspondence, Taylor writes,

> "For gear, I think it would be great to use your TASCAM as a central hub as I do in many of my sets, plugging in the SM57 into the 4 track and running live percussion and sounds into the mixer and processing it with reverb and delay... As for pedals I think you should get a reverb, delay, and this looper,[134] it does reverse and half speed which are my favorite."[135]

In the final version of the composition, we altered this approach by connecting microphones directly into the digital audio interface. This setup would also include connecting the four-track cassette recorder directly to the digital audio interface.

Source Material

During our first correspondence, we decided that the best process for accumulating material for the collaboration was to record source material. I recorded different sounds and instruments and sent Taylor the source material. Taylor would then

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[134] Taylor included a link to the Donner Tiny Looper Guitar Effect Pedal. This pedal would eventually make its way into the final setup as a looping pedal for the MVS-1.
[135] Randall Taylor, correspondence with the author, September 11, 2020.

bounce the sounds to tape and alter them through his own processes. During our first correspondence, he stated,

> I think that just being able to hear what you have available and being able to work with it. Maybe even taking samples of some of that audio to be able to see how it sounds with other things. I like that idea too—if you are specifically showing me some these instruments and the compositional elements. If you want, and you have ideas, you can play them within your setup then we can bounce those to tape and manipulate them. I can send them back as a layer of something. That would be not only you are performing the part, but then I've manipulated it and sent it back to be something that's part of one of the movements or even one of the compositions. Then, it's like a live sampling.[136]

It became my duty as the performer of the composition to provide source material that would become samples for Taylor to manipulate and arrange for the composition. For organization, I decided to limit my palate of sounds. This gave me direction as an improviser because I was able to select a complementary group of timbres. I divided the instrument groups into cymbals, drums, melodic, and textural. I limited myself even more by only creating sounds that were either sustained, scraping, striking, or improvisatory.[137] By approaching sounds with this intention, I could limit myself to specific timbres. This created an overall direction for recording the improvisations. There are benefits to this approach. For example, by limiting yourself to preset parameters, you must become very creative to find sounds that are possible from within the set parameters. I selected a set of

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[136] Ibid.

[137] All of the recorded sounds were improvised, but the last group was reserved for sounds that did not fit into any of the categories.

instruments to perform from within each group. Table 8 illustrates the groups, instruments, preparations, and performance approaches.

Table 8. Recorded instruments, groups, alterations, and performance approach.

	Instruments	**Preparations**	**Performance (Aim)**
Cymbals	20-Inch china cymbal, 20-inch suspended cymbal, Large Gong	Sizzle attachment, soft mallet, snare drumstick	Sustained, scraping, striking
Drums	Bass drum, cymbal on timpani, timpani	Cymbal on timpani. Soft bass drum mallet, snare drumstick	Striking, sustained rolling, rhythmic improvisation
Melodic	Piano (prepared/unprepared), small handbells, crotales, marimba, vibraphone (prepared/unprepared), tuned pipes	Nuts, bolts, weather stripping in piano, tin foil on vibraphone, soft vibraphone mallets, moleskin wrapped mallets	Improvisation, sustained chords, plucking
Textural	Bamboo chimes, pod rattles, sleigh bells, steel chimes	None	Sustained sounds

I found this approach to be successful because I limited myself before recording any source material. By selecting sounds that were sustained, scraped, or striking, Taylor could work with different textures for the arrangement. The recorded sounds resulted in a musical landscape created by Taylor for Movement I of the composition. Some of the

samples will also appear in Movement II. By limiting myself to the types of sounds I can make, I am able to explore different improvisational approaches in performance.[138]

I recorded the source material with a Blue Baby Bottle Condenser Microphone connected to the Focusrite Scarlett 18i20 3rd Generation Audio Interface, connected to Ableton Live 10. My recording process yielded 54 individual files. The length of the source material varied between one minute and three-minute audio files. Some material was recorded to a metronome of 110 beats per minute to create a sense of movement and rhythm. I also recorded material without a metronome, using the same instruments to create aleatoric sounds that could be interwoven in the composition. I decided, however, to not inform Taylor of which samples were recorded to a specific tempo. My intention was for him to discover the rhythmic nuances associated with each recording. Figure 19 is an image of Ableton Live with every recorded sound file. The sounds are grouped together by cymbals, drums, melodies (melodic), and shakers/chimes (textural). This is referred to as the arrangement view in Ableton Live. Here, we can see the differences between the length of the sounds, as well as material that I spent more time recording. Figure 21 illustrates the length of the source material, which can be seen on the bottom of the arrangement view.

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[138] Scholars interested in listening to the unedited recorded samples are invited to contact the author.

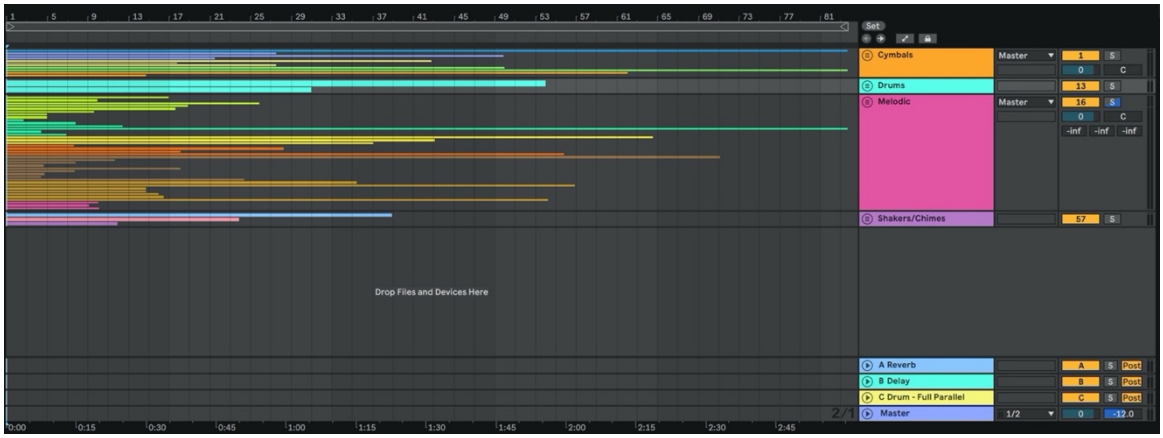

Figure 21. Arrangement view of the recorded samples sent to Taylor.

During our correspondence, I asked Taylor to document his approach to working with the source material. The following discussions will approach each movement as a balance between analysis and explanation. I also consider my own approach to performance practice in each movement.

Performance Setup

The performance of this composition requires a fair amount of preparation. The diagram below illustrates the connections between the different components. This includes anything that will be processing or altering sounds. Figure 22 illustrates the connections between all of the electroacoustic elements used during performance. This allows the reader to conceptualize how sound is transferred and manipulated during a live performance of the composition.

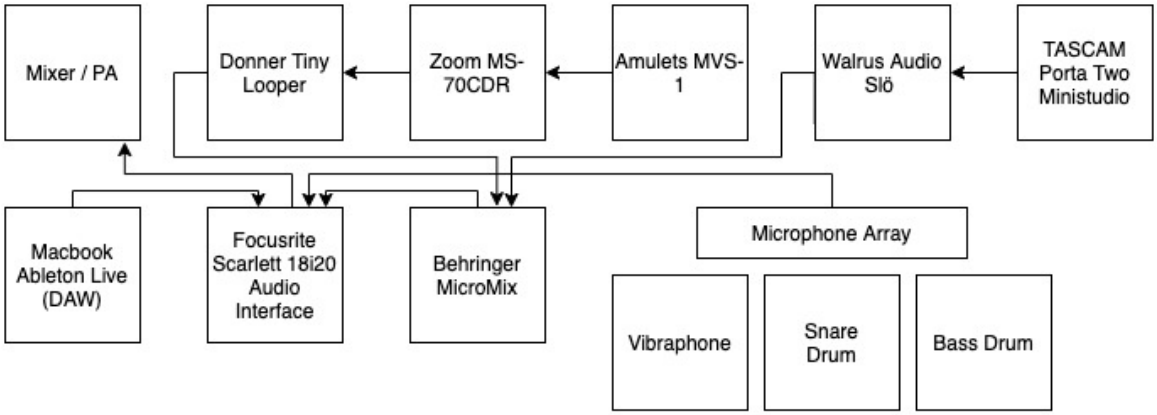

Figure 22. Technology and connections for a performance of *Resonance*.

There are three pedals that were used in the premiere performance of the composition. The Tascam Porta Two is connected to the Walrus Audio Slö Multi Texture Reverb Pedal. The pedal is not engaged until the beginning of Movement II. The reverb pedal adds a depth and swell to the four-track cassette recorder. Adjusting the mix on the pedal creates cavernous reverberating textures that allow me to fade in new four-track samples. The MVS-1 is running through the Zoom MS-70CDR and the Donner Tiny Looper. The Zoom MS-70CDR pedal is similar to the Walrus Audio Slö, they are both reverb pedals. However, the Zoom MS-70CDR also has eighty-six different chorus and delay effects that can be arranged into an effect chain. This means that you can arrange a both a reverb and delay setting to process the signal. I've found the possibilities with this pedal open up new avenues for creativity and variation. The Zoom MS-70CDR is processing sound from the MVS-1 and runs directly into the Donner Tiny Looper. The Donner Tiny Looper is a looper pedal capable of ten minutes of looping and overdubbing sounds. Sounds created from the microphone array involving the vibraphone, snare drum, and bass drum are processed through Ableton Live. Ableton Live has a plethora of audio

effects that can process incoming sound signals. While this performance featured the use of delay and reverb audio effects, future performances may use different audio effects, creating endless variations to the performance of the composition.

Movement I

Movement I is the first section of musical material that I received from Taylor. The movement features recorded samples combined with musical material recorded by Taylor.[139] The final version of the movement includes an opening section for bowed vibraphone. Figure 23 is an image provided by Taylor as he sketched ideas for the movement.

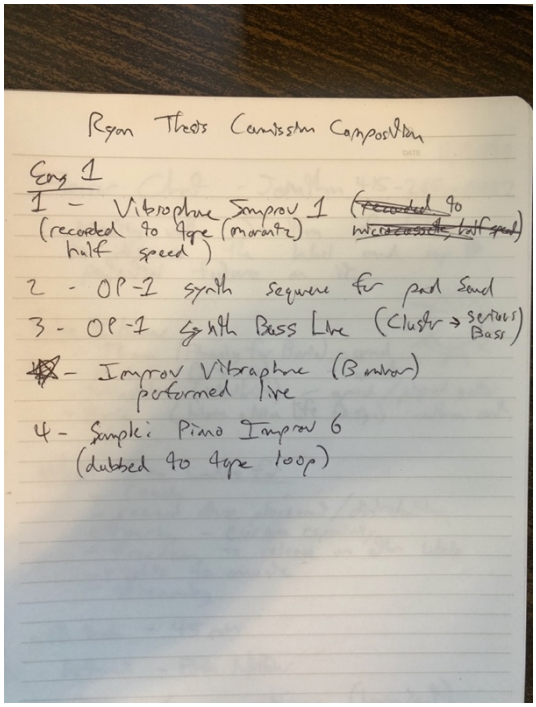

Figure 23. Taylor's sketches for Movement I.

[139] Source material refers to the material recorded by the author. Sampled material refers to the musical material sampled by Taylor. Resampled material refers to the sampled materials that were altered by the author.

Taylor began his process by selecting the source material Vibraphone Improvisation #1. Taylor took the sample, recorded it to tape, and played it back at half speed through his cassette player, the Marantz PMD 221. This sample is one of the most predominant sounds in Movement I. He then selected Piano Improvisation #6 as the second source material sample. This was also recorded to the Marantz PMD 221, but the speed was not altered. Instead, Taylor recorded the sample as a tape loop. When listening to the loop, one might notice a slight pitch wobble. This is a characteristic sound when working with some homemade tape loops. This adds a unique melodic and sometimes rhythmic variation to the loop. Taylor also recorded two tracks of his own musical material for the composition. One track is a bass sound he created using the Teenage Engineering OP-1 Portable Synthesizer (OP-1). The bass line follows the harmonic progression in the original source material of Vibraphone Improvisation #1. The final track provided is another synth sound by Taylor. It is a dense synthesized pad also created with the OP-1. Figure 24 is an image taken by Taylor during his process of recording the source material to tape and manipulating it through the Marantz PMD 221.

Figure 24. Recording the source material for Movement I to the Marantz PMD 221.

After this process, Taylor recorded the samples into his digital audio interface connected to his DAW. A similar process will be taken with the other samples, resulting in new textures and musical material. After Taylor runs the source material through his own pedals and processes, he arranged the material for Movement I in his DAW.

I received the first movement of the composition on a single cassette. When I began this project, I intended to perform the first movement only relying on the Tascam Porta Two. After listening to the composition, I faced some difficult decisions as the performer. The sound of the cassette recording smoothly blended the resampled sounds into one texture, but it was rather difficult to hear the precise entrances of different samples of source material. To remedy this, I asked Taylor for the sampled sounds and arrangement of the project with the intention of remixing and panning the parts. I asked if this departure would take away from the original intention of the piece, but he agreed it was worth investigating. I believed that being able to hear the sampled audio would highlight the changes and developments as the composition continues to unfold. After I received the audio files, I created a new project in Ableton Live and began the process of remixing and panning the different audio parts. Table 9 illustrates the tracks in the project, the alteration applied to the track, and the intention behind the alteration.

Table 9. Different tracks in the project, the alteration applied to the track, and the intention behind the alteration.

	Alteration	**Intention**	**Sample Entrance**
Track 1 (Bass)	Panning Effects: Glue Compressor, Equalizer	Balance among parts. Glue compressor added to expand bass sound. Equalizer added to expand low frequencies.	Ca. 2:59 – 6:50
Track 2 (Vibraphone Improvisation #1)	Panning Effects: Standard Multiband Compression	Balance among parts. Multiband compression split and adjust individual frequency ranges: lowering middle range, boosting high end frequencies.	Ca. 1:37 – 6:30
Track 3 (OP-1 Pad Sequence)	Panning Effects: Equalizer	Balance among parts. Equalizer added to cut out unnecessary high frequencies.	Ca. 1:41 – 7:23
Track 4 (Piano Improvisation #6)	Panning Effects: Standard Multiband Compression	Balance among parts. Multiband compression split and adjust individual frequency ranges: lowering middle range, boosting high end frequencies.	Ca. 4:46 – 6:20

The rows on the left are associated with each individual track inside Ableton Live. The alteration refers to the changes I made from Taylor's sampled audio files. Panning refers to the placement of a sound, either left or right, inside of a stereo field. Every track in the final mix was adjusted using panning. I adjusted the tracks to create a balance among the parts and to create space for additional audio involving the live electroacoustic performance. Track one uses a glue compressor to adjust the dynamic range of the bass sound. The equalizer was selected to pronounce the low end of the sample and to cut off unnecessary high-end frequencies. Track two also uses an equalizer to cut out unnecessary high-end frequencies. Track three uses multiband compression. The benefit to multiband compression is that each frequency range is able to be precisely adjusted. In doing so, you can highlight specific frequency ranges in an audio track. I decided to lower the middle range and increase the high-end frequencies. By lowering the middle range and boosting the high-end frequencies, the tape nuances of the sample became much easier to hear. Track four also uses a multiband compressor for the same purposes as track three. Each specific entrance was able to be heard in the final mix. Figure 25 is an image of Movement I as it appears in the arrangement view of Ableton Live.

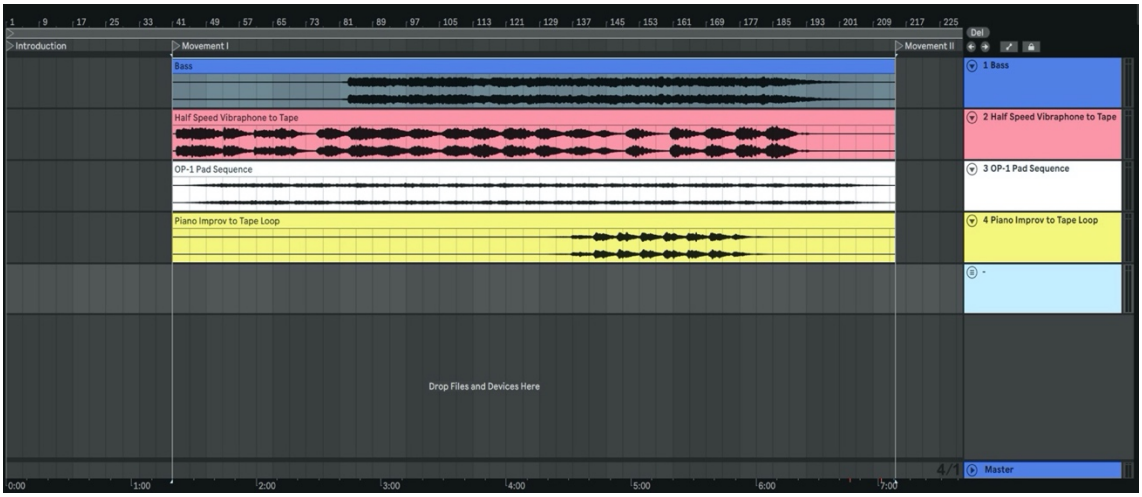

Figure 25. Arrangement view of Movement I in Ableton Live.

In the arrangement view, we are able to see the entire movement, including the silent space for the opening vibraphone improvisation. The columns on the right coordinate with the previously mentioned tracks. The long-colored blocks are the waveforms that are associated with each individual track. The size of the waveforms can give us a rough estimate of the amplitude of the sound. It should be clarified that these waveforms have different relations to the mixed volume levels in the project, which were adjusted separately and are not the focus of this discussion. It is important to examine the movement from this view because readers can observe the different tracks, their entrances, and how they fit in the greater form of the movement. It also illustrates the exact entrances of samples throughout the movement.

Track two is the sample Vibraphone Improvisation #1 and is the crux of the composition. From this view, we can see that the part is very dynamic, featuring large crescendos and diminuendos. Track 3 is the OP-1 Pad Sequence provided by Taylor and is also a constant timbre throughout the movement. The entire composition is performed

through the use of Ableton Live. After hitting play, Ableton Live processes live audio of the acoustic instruments, triggering automated parameters and plugins within the program. A benefit to this approach is that each movement can be performed attacca with little to no adjustments made in Ableton Live.

Movement I opens with one minute and twenty seconds of bowed vibraphone improvisation. A complementary motive to Piano Improvisation #6 is introduced, which will return at the end of Movement III. Figure 26 illustrates the live electroacoustic instrument tracks below the previously examined sampled sound files of Movement I.

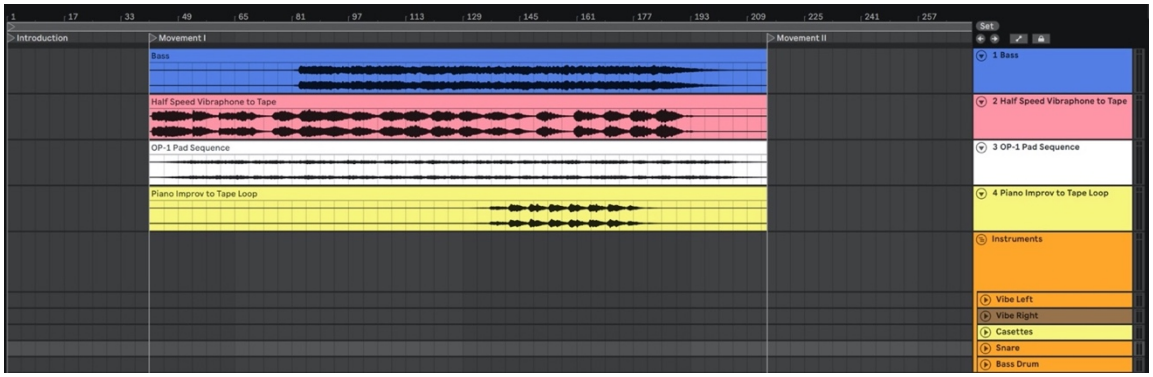

Figure 26. Arrangement view of Movement I with electroacoustic instruments in Ableton Live.

The sound of the vibraphone is captured by two Sure SM57 Dynamic Microphones positioned in an XY stereo image. The XY stereo image technique gives a balanced stereo input from the performed sounds. The vibraphone's sound is running through a SoundToys VST plugin, the "Little Plate: Electromechanical Reverb." VST is an abbreviation for virtual studio technology, which is audio software that emulates analog effects inside of a DAW. These effects are based off of analog machines and pedals. In

this case, the SoundToys VST is an adaptation of the EMT 140, a vintage plate reverb. The VST is emulating the analog hardware, generating sounds that resemble the plate reverb. I selected a plate reverb to process the incoming sound in my performance because of the deep and luscious quality it gives the sound. I wanted the introduction of the vibraphone to linger and become a texture itself, with the intention of the sound blending and morphing with the other sampled sounds. Figure 27 is the bowed vibraphone motive, which eventually dissolves into the first resampled sound of the movement, Vibraphone Improvisation #1.

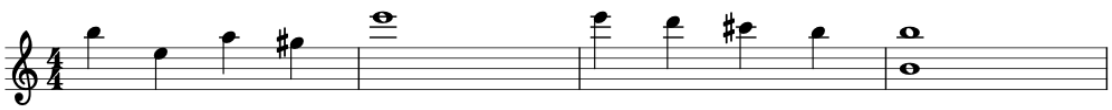

Figure 27. Opening vibraphone motive of Movement I.

Because the sample is slowed down to half speed, the resampled audio is a lower pitch, creating a sound that resembles the deep resonant sound quality of a marimba. To complement the textures, I improvised with a selection of bowed pitches and sustained rolls with soft mallets to create some variation to the long-sustained sounds of the resampled audio. The movement features harmonic and melodic improvisations in F-sharp minor.

Movement II

Movement II features the four-track cassette recorder as a central instrument, as well as improvisations on electroacoustic drums. Taylor recorded material for the cassette loop on his own four-track cassette recorder. The cassette loops were then sent to me for the performance. Figure 28 is an image of Taylor recording the cassette loop for Movement II.

Figure 28. Taylor recording the 4-track cassette loop for Movement II on his Tascam 414 MKII.

During a live performance, the sounds of the snare drum are processed through delay and reverb plugins in Ableton Live. A performance of Movement II uses one cassette loop. Variation is created by using the pitch control on the Tascam Porta Two and by adjusting the overall mix of the reverb pedal. The four-track cassette recorder is used to create a

constant texture and features a layer of improvisation above the sounds. Table 10 outlines my current approach to a performance of Movement II.

Table 10. Performance practice for Movement II.

	Sections			
	1.	2.	3.	4.
4 Track	Fade in track 4, then track 1	Tracks 2 and 4 playing	Tracks 3 and 2 playing	Tracks 2 and 4 playing
Combined Performing Forces	Instrumental improvisation	Instrumental improvisation	MVS-1 improvisation	Instrumental, MVS-1 improvisation
Transition	Simultaneously increase mix, slide pitch adjustment up. Fade in track 2, fade out track 1	Simultaneously increase mix, slide pitch adjustment down. Fade in track 3, fade out track 4	Simultaneously increase mix, slide pitch adjustment to center. Fade in track 4, fade out track 3	Slowly fade out track 3, decrease mix of reverb. Wait for introduction sounds of Movement III

Each section in Movement II follows a similar approach. The first step is introducing the sounds on the four-track. After the sounds are faded in, an improvisation begins on the snare drum. The improvisation is not limited to the snare drum; other sounds such as handbells or cymbals may be performed into the snare drum's microphone. Delay and reverb are added to the incoming sounds through Ableton Live. For harmonic variation and to create a difference between the sections, the following transition is used. First, I adjust the mix level on the Walrus Audio Slö Multi Texture Reverb Pedal to full (100%) and hold the sustain to prolong the reverb. Then, I slide the pitch control on the four-track to the desired position. Afterward, I fade in or fade out the appropriate tracks. Finally, I adjust the mix on the reverb pedal to its previous position

and allow the sounds to dissipate. This approach is utilized for each section. Taylor sent a video of himself improvising with the tape loop. Figure 29 is a still from the video.

Figure 29. Video still from Taylor's experimentations with the tape loops for Movement II.

The most unique sections are three and four, which feature Taylor's circuit-bent cassette player, the MVS-1, which is connected to the Zoom MS-50G MultiStomp Multi-effects Pedal. Figure 30 is the MVS-1 sent by Taylor for the performance of the composition. The cassette player is the GE Cassette Recorder 3-5027. It includes a built-in microphone, three-digit tape counter, headphone jack, and a microphone jack. Taylor's version has been altered with a motor control, which is visible above the tape deck. The tape deck cover has also been removed.

Figure 30. MVS-1.

The practice of altering the circuit board of electronics to exploit and add new features to the device is known as circuit bending. In the case of the MVS-1, Taylor circuit bent the motor by attaching a variable resistor, also known as a potentiometer. Originally, this cassette player could only play at one speed. With the addition of the potentiometer, the unit's motor is able to be controlled; it can speed up and even slow down to a complete stop. By removing the cover of the tape deck, it is possible to have extended tape loops for performance. Figure 31 shows my hand holding an extended tape loop.

Figure 31. MVS-1 and an extended tape loop.

I created the tape loop in Figure 31 for the performance of *Resonance*. The extended loop is created by splicing together a long section of tape. The cassette was altered by removing the upper half of the plastic enclosure to create an open top. The tape loop must have tension to properly feed through the cassette player, otherwise the loop will become caught. Unfortunately, I discovered this while experimenting with the amount of tension necessary with the original loop sent by Taylor. Figure 32 is the mangled loop.

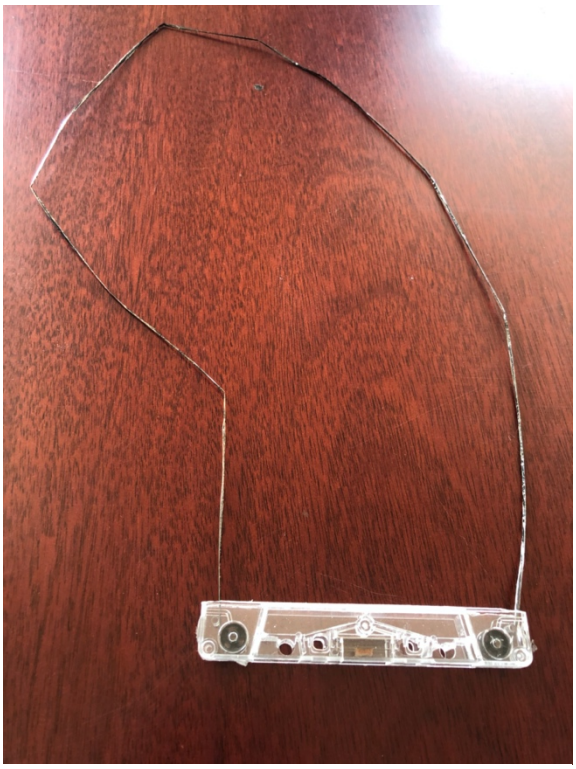

Figure 32. Original tape loop with damage.

There is also a size difference between the cassettes in both images. I created the tape loop in Figure 31 with the intention of experimenting with the cassette's overall size. It is important to remove the section that will be in contact with the middle supply and take up reels because the motor of the cassette player will still be running. I did, however, leave more of the cassette body inside of the machine to stabilize the loop in the MVS-1. Taylor's loop and my own include the essential elements, such as the tape guides in the corner, the capstan and pinch-roller openings, as well as the tape head opening and the pressure pads. My version has more of the plastic enclosure for stability.

While experimenting with the extended tape loops, I was using my fingers as an anchor point for the tape. This approach worked for some time, but it also contributed to

the buildup of oils and other particles on the cassette loop. Eventually, I used a drumstick as an anchor point for the performance. The benefit to this approach is that I am able to quickly slip the cassette loop over the stick to create the anchor point. Then, I am able to use my other hand to start the cassette player, adjust the potentiometer, adjust volume on the mini mixer, and manipulate effects on the pedal. I can also make slight adjustments in tension to the drumstick to give variations in pitch or to distort the playback. When combined, these techniques give a visceral and theatrical approach to performing the cassette player and extended cassette loops.

During a performance, the sound from the MVS-1 is running through the Zoom MS-50G MultiStomp Multi-effects Pedal. The pedal emulates a tape echo. The pedal is turned on during performance and is adjusted using the mix and time parameters. This allows me to control the length of the echo in the mix. The audio from the Zoom pedal is also connected to the Donner Tiny Looper pedal. By recording a loop of the incoming audio, I can recall the sample and manipulate the sound at any point during a performance. I can also reintroduce the sound into a texture by fading in the volume and selecting reverse or half speed. This provides more variety to the sample, eventually leading to its recontextualization in Movement III.

Movement III

Movement III was the most difficult section to compose and arrange. I contacted Taylor with ideas for Movement III, proposing a loose arch form involving resampled material from the previous movements. He enjoyed the idea and gave me permission to arrange the sampled source material from Movement I for the final movement. The final

movement consists of source material sent to Taylor for sampling, and my own resampling of Taylor's material for variation.

While I was remixing Movement I, Taylor sent an audio file of him performing a guitar improvisation. Taylor was investigating melodic ideas for performance over the sampled material. I decided to include Taylor's guitar sounds in the final movement. Thus, I would be resampling and mixing Taylor's source material. The composition truly became a collaborative creation between both contributors. During my correspondence with Taylor, I asked how he ends his live performances as Amulets. He responded:

> I really like the idea of the song ABCBA song structure and would reintroduce a phrase from Movement I (guitar melody or vibraphone) but in a different context… heavily glitched or through effects to differentiate, but touch on the motif. As for ending, I always like a good build up, then gradual fade out with a lot of the parts played in reverse and half speed. I tend to do this move a lot and feel like it's a solid and glacial way to slow things down to a finale.[140]

During a previous correspondence with Taylor, we were uncertain how to end the composition. One idea involved the composition building to a climax. Another involved a gradual decrescendo. I settled on an ending involving a large crescendo, emphasizing a build to the finale. Because I would be working with sampled material that was already played in Movement I, I would have to resample the material for the final movement. Table 11 illustrates the changes that I made to the sampled material for the last movement.

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[140] Randall Taylor, correspondence with the author, February 27, 2020.

Table 11. Resampled parts for Movement III.

Audio Track	RH Resampling	Sample Entrance
General Changes	Automated tempo decreases to 92 BPM	Ca. 15:30
Track 13 (Bass)	Halve original sample length (increasing the perceived speed of the sample), Double audio track, pitch doubled audio track down a fifth.	Ca. 18:17 – 23:57
Track 14 (Vibraphone Improvisation #1)	Double original sample length. Reverse sample (Ca. 18:07-23:50)	Ca. 14:54 – 23:14
Track 15 (OP-1 Pad Sequence)	Double original sample length. Pitch down an octave. Effects: Warm fuzz pedal, echo.	Ca. 14:42 – 23:57
Track 16 (Piano Improvisation #6)	Effects: Standard Multiband Compression, Digital Delay	Ca. 15:38 – 17:02
Track 17 (Guitar Lead – Clean)	Reverse sample. Effects: Amplifier, cabinet, equalization, delay	Ca. 22:12 – 23:42
Track 18, 19 (Guitar Lead – Distorted)	Double sample length. Double audio track and duck below mix for depth. Effects: Distortion pedal, amplifier, cabinet, delay.	Ca. 18:33 – 22:05

The columns on the left represent the individual audio tracks that are heard throughout Movement III. The middle column represents how I resampled the samples. The column on the far right of the chart represents each entrance of the resampled material. The largest additions to the movement are tracks 17, 18, and 19. These tracks are recordings of Taylor's guitar. I included the samples because the guitar is central to his live performances as Amulets. This adds his voice as a performer in the composition.

The guitar tracks were the most difficult to resample. The original source material was a clean guitar with little to no effects. I intended to use this sample to depart from any previous material. I wanted the sample to be central of the C section of the arch-form. It should be noted that this approach is an extremely loose and liberal use of an arch-form. The melodic and harmonic material is reintroduced as A material, the four-track introduces different timbres as B material, and finally, the large guitar climax is the C material. The process then loosely repeats similar material from B and A to end the composition. Figure 33 is the arrangement view of the musical material from Movement III.

Figure 33. Arrangement view of the musical source material from Movement III.

Creating the tone and sound for the guitar distortion was very difficult. I did not want to use outside VSTs for amplifier simulation. Instead, I limited myself to VSTs that are native to Ableton Live. I listened to albums and live recordings of Amulets to draw inspiration for the guitar tone. After settling on a sound inspired by Taylor's guitar tone, I needed to create a live and expansive sound world through the use of electroacoustic instruments. In a previous correspondence, Taylor and I discussed looping a section of audio and improvising over the track. I decided to add a looper effect in Ableton Live. While this varies from Taylor's approach to looping with a guitar pedal, I believe that this added my own collaborative touch as an electroacoustic musician.

For the climax of section C, I automated a looper inside of Ableton Live to capture and repeat a sixteenth-note ostinato performed on the bass drum. The looper is not activated until the pick-up note before the distorted guitar track becomes audible. To prepare for the loop, I perform a series of sixteenth-notes on the bass drum. When the looper turns on, it records one measure of live audio, then continues the loop by performing the recorded sound. What is particularly useful about Ableton Live's looper

and my approach is that the pedal automatically quantizes the passage, creating a steady stream of sixteenth-notes. I am then able to then move away and perform material on the other instruments.

As the distorted guitar tracks fade into the clean guitar track, the looper is automated to reverse the sample, creating an audible new texture. It is also automated to fade out and shut off. This allows more liberty to create sounds without worrying about physically altering the effect. During the passage, I also explore a combination of rhythmic and timbral improvisations with drums and sustained bowings on cymbals. The sustained bowings on the china cymbal are used to create a timbre similar to Taylor's guitar.

Conclusion, Future Directions

This composition has the potential to be everchanging. For example, the decisions that I made regarding VSTs and guitar pedals can be altered at any time. Taylor also included a second four-track cassette tape with different recorded samples for Movement II. These elements add to the ever evolving and collaborative approach to the way this composition came to fruition. Taylor encouraged this approach throughout our experience with the composition. What might it sound like if Movement I uses tuned metal pipes instead of vibraphone? What if I use the original cassette version of Movement I, but use the pitch control on the four-track cassette recorder to slow the playback? What if the alternate tape loops for Movement II were used with new effect pedals, such as distortion and delay? What if I limit myself to only using the bass drum in

the climax of Movement III? The possibilities for creative reinterpretation involving *Resonance* allow for fascinating new territories to be explored in improvisation.

While a standard musical score for *Resonance* does not currently exist, the composition may one day be arranged for performance. This process would involve developing an appropriate notation system for performance, as well as duplicating the tape loops used in Movement II for performance. The score may be arranged to substitute instruments or tape recorders, such as Taylor's MVS-1. This opens provocative new options for instrumentation and adds to *Resonance's* ever evolving nature.

Because of the circumstances surrounding the COVID-19 pandemic, a live performance was unable to take place. In adapting to this situation, the performance was recorded and premiered on YouTube on April 17th, 2020 and featured a live question and answer session. Figure 34 is a video still from the premiere performance on YouTube. A link to the performance is listed in the footnotes.[141]

[141] https://youtu.be/-cND96Q-w50. If the link becomes inactive, please contact the author for a recording.

Figure 34. Video still from the YouTube premiere of *Resonance*.

Similar initiatives and adaptations are currently evolving among artists and performance groups. Third Coast Percussion recently adapted to this situation with their "Digital TCP Livestream," which includes live performances and content curated by the ensemble. Sō Percussion has moved their annual summer institute (SōSI) to a virtual platform and is offering two tracks of study, "Collaborative SōSI" and the "SōSI Online Course."

Scholars should expect a rise in the prominence of these concerts and interactions, not only due to the response of the current global situation, but because the technology to make these collaborative experiences is becoming easier to use and more accessible to performers. For example, the premiere of *Resonance* was adapted from a live performance to a remote YouTube premiere in less than two weeks. The performance was recorded, mixed, edited, and uploaded to the website for the premiere. The platform made the process very intuitive. Once the video was uploaded with a premiere date and time, YouTube automatically plays the video and activates the live chat. While my

performance was prerecorded, ensembles such as Third Coast Percussion are adapting to this situation by live-streaming entire evening-length concerts.

Conclusion

Randall Taylor's live performances as Amulets inspired *Resonance, in Three Movements*. The source material for the collaboration was recorded in Athens, Ohio and sent to Portland, Oregon. Taylor listened to the samples and selected sounds that resonated with him. The material was sampled and reimagined on cassette tape, adding depth and warmth to the sounds. The sounds, now recorded to cassette, were sent by mail to Athens, Ohio, where they were resampled by the author. During rehearsals, Taylor's sounds resonated in the practice space, paired with different sets of percussion instruments. The premiere performance was intended to be a live in-person event, but due to circumstances surrounding the COVID-19 pandemic, the composition was adapted for a virtual premiere. With that change, the performance was able to be viewed by audience members on their own personal streaming devices. During the premiere performance, the composition resonated in the presence of viewers at different locations, creating a unique connection between distant strangers which simply could not have been possible at the intended premiere.

This dissertation has argued that collaboration is essential to examining the contemporary percussionist because the art form relies on performers and composers consistently redefining both composition and performance through different facets of interaction. In doing so, it has examined five different case studies involving unique approaches to collaboration. All of these case studies have resonated in some way within the fields of musicology and percussion studies. The compositions are being discussed by

scholars, are constantly performed, and the listeners are discovering new ways of engaging with the music.

Resonance is a piece that came to fruition by two artists navigating the strange territory of thoughts, feelings, and memories associated with music. *Resonance* is two individuals creating an experience that challenges previous approaches to collaboration, with the aim of creating an immersive experience outside the boundaries of what is considered "music for percussion," because *Resonance* simply doesn't fit in that category.

Resonance, however, does contain an idea. The idea that it is the duty of the percussionist to develop our artform by exploring provocative new approaches to collaborations with artists and individuals from outside of our own canon. Each case study in this dissertation examined facets of collaboration that are currently being investigated by composers and performers. What will the next generation of contemporary percussionists bring to challenge current explorations in collaboration and creation? And how might these efforts resonate into the larger portion of our history as percussionists?

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Appendix A: Interview Transcripts

Email Interview – Artistic Direction

Ryan Harrison (RH): Your creative work includes tape installations and live performances. Does your approach to composition and creation change for these different engagements? If so, how?

Randall Taylor (RT): Absolutely. Live performances are typically something I have full control over while installations I try to make site specific or tailor to a certain attribute about the physical space of the installation. I think it's the difference of creating my art and being able to bring it and perform it consistently, as opposed to creating art that's inspired by (and designed for) a very specific space and time.

RH: What draws you to using tape and four-track recorders in your musical compositions?

RT: I was initially drawn to tape and four-track recorders as a way to not use a computer and create a hardware setup that worked for me. I fell in love with the versatility, sound, and texture of tape and can't imagine a better tool for my musical compositions.

RH: What are the limitations, if any, to working with tape as your medium within your personal compositions? If so, how do you work with these limitations?

RT: I think the fidelity and four-track maximum of tape are definitely limitations, but they are also limitations I appreciate. The limitations make me think more creatively, such as the limited frequency range. I always try to fill out the low end with synths or my guitar pitched down an octave. Also, to add more tracks and options to my recordings and live setup I add another four-track to run 8 potential tape loops at once.

RH: Many of your practices with tape parallel early reel to reel practices explored by composers in electroacoustic musical studios. How do you select source material for your tape loops in live performance?

RT: For my tape loops, I typically start with a drone/pad or mood I'm trying to create. I heavily lean on my OP-1 and guitar/pedals to get me started, but after that I like to record melodies, acoustic instruments, field recordings, and other instrumentation to add texture, melody and depth to the overall composition.

RH: The online community seems to be very receptive to your work, especially on social media. How has your experience been working on these platforms?

RT: I think as an artist social media is a great tools and resource for helping get your music and art out there and in front of people. It's definitely a lot of work and kind of

silly at the same time, but [it] can potentially yield a lot of fans and positive results. Putting yourself out there and self-promotion can be really hard, but social media as a tool has really helped me and my career.

RH: How does a performance location shape the approach to your live performance?

RT: For me, playing in traditional show venues, especially larger spaces with nice sound systems make me want to "rock" out more and make my performance larger than it is. I feel with a stage that large and me being only one person, my live performance should be much more dynamic, visual stimulating, and loud. This of course is influenced by the traditional idea of a band and performing such space. In smaller bars, galleries, or DIY spaces I feel much more connected to the audience because of the intimate nature of these spaces. For these shows I tend to approach my live sets with more nuance and delicacy. I still want to be loud and dynamic, but the vibe and intention is much different.

RH: What direction would you like to see explored in collaborative projects among artists, performers, and composers?

RT: When artists and composters collaborate, I always like to see people that come from completely different fields/musical backgrounds and try to find a common language to collaborate. This smashing of styles and approaches often yields interesting results and elevates the work to something more fascinating to me. It's almost like when people have a child and you can find distinct features from each parent, but they've created something totally new and beautiful.

First Correspondence with Randall Taylor

Randall Taylor (RT): I'd love to hear a brief background on you, you said this is part of your dissertation?

Ryan Harrison (RH): Yeah, this is part of it. I'm a Ph.D. Candidate in the School of Interdisciplinary Arts at Ohio University. My work blends the areas of musicology and percussion performance. My background is in percussion performance. I'm in the ABD process, trying to finish up things for this new Scholar/Artist track in the program. As part of my program, I have to have a final creative project that can "stands alone" as well as integrate into my dissertation. In my four years as a student I've had some lecture recitals, one on the music of Steve Reich, and I did another program featuring some more avant-garde theatrical pieces, with composers like John Cage and Vinko Globokar. I was thinking about ways on how to tie all of this together, and I thought that the commission of a new work would be wonderful, especially from someone who hasn't written for percussion, and isn't familiar with our canon or works. I've been following your work for a long time, and I was always curious about what it would look like to blend our two worlds, and I was the facilitator for what you envision with the composition.

RT: That certainly sounds very interesting. I was immediately interested in the cross-over of worlds, of like this classical composition world, and you in an academic world, and me being in a room filled with cassette tapes and weird old technology. I do think there's an interest in that. As far as for me, I have been a musician for a long time. I grew up playing guitar. I was in a lot of bands playing guitar playing different styles of music. I had a lot of different interest in music. Initially, ambient music wasn't my thing, I didn't grow up listening to Brian Eno, not till later in life. I really came from a lot of pop music growing up, then a lot of metal, post-punk, emo. I was diving into these bands. I was in a post rock band for a long time and getting really into instrumental music. I've also had side projects; many were electronic side projects. They were things that I could do in an DAW by myself. I remember watching a YouTube video about six years ago, from Alessandro Cortini of Nine Inch Nails, doing a rig rundown of the equipment he used live, and one of them was the TASCAM 4i14. He was showing how he would play a chord progression on it, using individual tracks and using the four-track as an instrument. I was immediately blown away by that and wanted to try that myself. He was using a 60-minute tape, using a chord drone for each of the 4 tracks. I tried doing that and was getting frustrated and impatient. So, then I started looking into tape looping. I decided that might be a good avenue for this, maybe record a five second note, or chord, and loop that endlessly. Then I started playing around with the textures, notes, and chord progressions within that. That kind of built up the entire basis for what I would be doing, experimenting with these tape loops and four tracks. Being a guitar player, I had a lot of experience with pedals, so I started introducing pedals into that setup. And not really being from an experimental background, but trying to make things feel melodic, or feel structured. I had a moment where I was playing these cassettes and looping things and thinking, "I want to perform these things live" and a big part of the Amulets project was

to build a computerless setup, to get away from the endless limitations, and move towards working only with the things I have. I remember starting to play guitar with some of the tape loops and sort of relearning guitar in a way that was like, “Okay, how do I make these two worlds, the traditional world of guitar playing that I come from, and the new world of tape looping meld?” I was looping the guitar then adding the tape loops, so I was able to mess with the tapes and vice-versa. I was stacking loops and creating sonic structures. I never really got into all traditional ambient music, but it was the work of Tim Hecker that really fused a lot for me. I remember friend showing me his work, and it just really transcended this ambient music; instrumental ambient music could be heavy, and noisy, and weird. All the things I wanted, I want distorted guitar in these songs... I want to be pretty and melodic, but I also want to be noisy and weird. His worked fused all of those things. For me there’s always a pop element in the back of my mind, I always want to make things catchy or melodic, or have an emotional quality.

RH: I like the versatility that you mentioned, being open to have something not as droning. Tim Hecker is a great example. I remember the group Stars of The Lid being a turning point for me.

RT: Godspeed you Black Emperor… I love the bands that opened up these sonic worlds for me, I was like, “Wow, you can do this?” So, is it preparing a work for you to eventually perform yourself? You mentioned in the email about traditional notation, sheet music, writing things out. That’s something I don’t do as far as a composition and a score. I’m very curious to see how you envision my work translating into what you are doing and vice-versa.

RH: I was thinking of a template structure. Maybe three movements? Then we can have the option to get loud if we want. It also gives us a sense of variation. I was thinking that perhaps you record loops, or maybe even writing something that’s 6-7 minutes long on your own? Maybe we can add textures and record them separately? Then, I could transcribe them for different instruments. Maybe you offer some color suggestions, like, “Maybe we can be bright here...” or, “Let’s get dark here.” Then I can go and figure out what the instrumentation may be. I want you to be able to feel as comfortable as possible so that when I arrange it and transcribe your ideas, I’m not going too far outside of what you feel would represent the composition.

RT: I think that’s pretty interesting. I’m already starting to think about how we lay out those sounds and send you suggestions. Maybe, “Imagine this like, a trumpet.” What kind of instrumentations do you have available, or would like to use?”

RH: “I am open to almost anything. There’s really nothing off the table. I would prefer for it to be relatively transportable. I’ve mentioned to you that I play prepared piano and stuff like that. I remember improvising a few weeks ago on the piano with an e-bow, and I was really into it. So, I’m really not stuck on anything… But, if you wanted me to, I

could record a video and send it to you of some of the instruments and timbral possibilities I have here?"

RT: That would be cool. Limiting our ingredients, if we were to think about this as cooking, right? I want to kind of know what's in my pantry. So that way, I know what's available to you, and I know what's available to me. For me, the collaboration part is very interesting; to see what you have available to you and what you can do and what I can loosely describe to you, like, "Hey, you should try this thing over this thing I made." Then we can kind of control things. Then we can give you the freedom to improvise too, within your realm and wheelhouse.

RH: It's funny, this close to a discussion I had with Sean Connors a few weeks ago about Third Coast Percussion's collaboration with Devonté Hynes.

RT: Yeah, it's pretty interesting. I think that just being able to hear what you have available and being able to work with it. Maybe even taking samples of some of that audio to be able to see how it sounds with other things. I like that idea too; if you are specifically showing me some of these instruments and the compositional elements. If you want, and you have ideas, you can play them within your setup then we can bounce those to tape and manipulate them. I can send them back as a layer of something. That would be like, not only you are performing the part, but then I've manipulated it and sent it back to be something that's part of one of the movements or even one of the compositions. Then, it's like a live sampling. That would be very interesting!

RH: Oh yeah, I'm already in love with that idea.

RT: I think we could form a band of sorts and make a collaborative composition. Especially if you sent me some ideas that you're working with. Then I have source material to work with. That would be very cool. Maybe we pick an arbitrary key or something. Even if it's something that's not a tonal instrument, maybe it's something that is interesting texturally.

RH: Absolutely. I have some gear here that can give us a great recording of some samples.

RT: I like that idea a lot. Just a little sampling pool of sounds to start off with.

RH: I like that a lot. That gives us a template and sounds to work with.

RT: You mentioned three movements as far as the composition. Do you have a time length?

RH: I was thinking 15-20 minutes. It can be longer or shorter if you think it needs something.. more drama, or more drone?

RT: Within this piece, do you think that you would have some of it prepared and some of it live? Maybe this is a prepared piece, a layer that you would play as a backing track to play over? Are you intending it to be something that you can get multiple people to play live? Or is it something you would play one part of to accompany the music?

RH: I haven't really thought that far ahead. It could really work either way; if we did want to get other musicians, we could provide the material for it. But I do like the possibility of being able to perform it solo as well. If there's something that demands it, I have no problem adding people or extra textures. I'm leaving it up to you.

RT: Absolutely. I've got a few ideas running through my head. And again, I've never really done it like that. Having someone else play a part that's like a layer of a track, that maybe comes from a tape loop? Maybe having someone emulate that sound? That does sound kind of wild and weird. I'm just trying to get my mind racing. What instrumentation are you thinking of sending over, for possibilities?

RH: I was thinking about vibraphone, maybe prepared vibraphone? We could put some different alterations on the keys to get different sounds. You can get some interesting distorted sounds.

RT: That sounds very interesting, I'm pretty interested in the textures and the prepared element of the vibraphone. I don't think that I've ever heard something like that before. So, it can be like, resonant and rattling?

RH: Yeah, I'll send you a video of me doing some different alterations. I like that idea. I also have a large set of tuned pipes. Those are also pretty resonant. As far as drums, I wouldn't be opposed to adding those for some depth… if you needed that, of course. Bass drum, or maybe some sort of sustained drum element. We can use it for crescendos and swells, that's a possibility. It might be neat for the separate movements to focus on different timbres, perhaps? One being vibraphone, maybe moving to, I don't know, wooden or resonant sounds? And then maybe something else at the end? I want the textures to be able to interact with whatever you've prepared for me.

RT: Yeah, I was thinking also. You said you has a TASCAM 4-track. Maybe for one of the movements, preparing a tape loop to send you to be to perform. These are the looped parts that you'll have four options to work with. So, it's like, "Here's the prepared tape loop, you have four possible chord drones." Or maybe percussive elements? Then you can play with them live. It might be neat to have another tape player prepared as well, that you can just hit play on. That could be a prerecorded composition.

RH: I really like that idea. I can almost see an improvisatory nature coming out with it. Or even using it as a tool, bringing up specific textures and tracks to illuminate certain sounds. I really like that.

RT: If you're having prepared vibraphone or an acoustic instrument that is miced, you can run that into the 4-track and be able to record the tape loop live and be able to play individual 4-track recordings of it. That would be interesting too. That might be a lot for you to do physically, but the prepared 4-track would be great. It would be neat to have a couple 4-track loops that you're able to play, switch out and add different elements to them.

RH: I like that because it adds a different performativity to the composition which is visceral in itself. In my field, when people play these types of compositions for "tape" and percussion it doesn't mean anything, the composer just sends you an MP3. I'm really attracted to the visceral nature with tape, there's a physical nature to it. Actually touching it and having people witness this happen adds a very theatrical element to everything. I think we can find a balance in there somewhere. I've seen some of your live performances with your "suitcase of drone" and that adds a whole theatrical element to the performance.

RT: I like this idea of you almost embodying some of the approaches and techniques that I use to work that into your own composition. It's borrowing an idea to place into your own work. It's like having you do what I would do, and it seems very fitting. I was also thinking to, as far as a theatrical element; if we had a prepared vibraphone part that is sustained, much like the approach I take with my guitar work? Maybe being able to loop that live? Maybe you're able to mic the vibraphone using a looping pedal, so that once you stopped playing a part that's going, you can loop it and move to the four-track or something?

RH: I like that a lot

RT: When I approach live performance, I'm looping a certain part and then being able to go to another part, and then building that part up, stacking a whole bunch of different textures and loops. I don't know if you have a looping pedal, but a lot of the ones I really like have half speed and reverse functions. Maybe you're doing a vibraphone part and recording that in the looper. Then in the live setting you can half speed and reverse it. That way you're building lots of different sonic structures from a live loop in a performance setting.

RH: I really like the idea of you coaching me on your own performance practices.

RT: So, I can't write it down in the traditional sense, but as a performative composition that is what I would do. It would be cool to have it translate to something that you would do and can do. I think that's an interesting hybrid of these ideas.

RH: It will also give us variation too, right? Because then there's this loop that we can manipulate from there, half speed, reverse. Maybe even a distortion pedal on it?

RT: All of those things are options that I would do in my own practice. As far as like changing the loop, because the loop itself will always be there, right? It will loop endlessly. It's the things that you do, especially in a live performance and in my own work, that's manipulating the loop. Maybe not physically manipulating it… but I mean sometimes you are. Sometimes you can pinch the tape and slow it down and do other things. But its more how you morph the loop into sounding less like the loop; processing it through effects, reversing it, doing all sorts of different things that feel like a segmentation in the song itself. Then it's like, "Oh, something changed here." And that's something that I always rely on, because at that point I don't feel like a traditional "droner." I change a lot and It feels ever evolving.

RH: Do you think you could send me some of the gear that you work with? Looping, reverb, or distortion pedals? I might have some stuff around that may work, and I absolutely have friends with gear who could help me out.

RT: Certainly. Off the top of my head, things that are necessary include a looper, distortion, delay, and reverb. Those are bread and butter for what I do. I have variations within those, but they're all very different. Even just sending you a four-track of percussive sounds that you manipulate will sound much different on your tape machine than mine. And I think that's very interesting, because the sound will change depending on what condition your machine is in, how fast it plays back, or how you want to adjust it tonally. It's pretty neat. It's going to sound totally different. I can send you a gear list.

RH: Is there anything else with regards to the composition or the instruments I can help you with? I've got a few ideas for parts to send you. Beyond that, maybe giving me some direction as to what you want to hear more of? You could even send me a guitar part and tell me to play it on vibraphone. Here is another idea that came to my head. If we did want to have something like a prepared piano, or a marimba for those deep resonant sounds, that's something that I could record and then send to you to manipulate. Then were not lugging around too much gear.

RT: I like that idea a lot. I love the idea of recorded acoustic instruments that we can take and manipulate, and then I can process through the things that I use. Then make it sound the way that I think it should sound or whatever, I think that's very interesting. Anything that you want to send over I think that I can start working with. Then we can start thinking about places and how they fit in the composition of the piece.

RH: I know I mentioned it in our email, but your MVS-1, if that was something that you think would fit in the composition, I would love to commission you to make one. But only if you feel that would fit as an instrument inside of this composition.

RT: Yeah! I can totally do that for you. I think that preparing something for that would be great, I haven't done that yet. That would be very cool to have. It would be neat to

have a part that featured that. It has such a wide range of speed so it's very interesting. You can completely stop the tape, so you can have these intervals of parts that just come up, then stop. Then come back up, then stop. Or even maybe even include it in the score? That takes the MVS-1 and makes it almost a percussive element. You could also have sections where the tape doesn't play.

RH: Create tension and whatnot?

RT: Yes. And you're just turning a knob, but it's still very interesting.

RH: And it's very theatrical, and I'm super into that. That's what drew me to the cassette player.

Second Correspondence with Randall Taylor

RT: Hey!

RH: There we go…

RT: I was like, "Did we Skype before?"

RH: I think that we did, but this works much better.

RT: Cool, how are you?

RH: I'm doing well, how are you?

RT: Good, good. Sorry for the delay getting back to you

RH: Oh, no you're fine. I've been so busy as well. I was grading papers, revisiting old chapters, reading new literature.

RT: That's great, how has everything been coming along so far?

RH: Yeah, everything's coming together. I've had some meetings with my advisors and they really love the ideas and everything. I'm trying to get everything put together as best as I can and documented. I'm one of those people who has to put everything together edit later. It's been interesting.

RT: That's good to hear. So, everything's coming together well then?

RH: Yeah, absolutely. How have you been?

RT: I'm good! I've been pretty busy, juggling a few projects. The holidays are creeping up and stuff so like, just trying to get some stuff done, but everything's been great.

RH: I saw that you are going on a West coast tour with This Will Destroy You?

RT: Yeah, it's really cool. I opened for them when they were in Portland. We always kept in touch and I was always like, "If you ever need an opener let me know." And I got to open that show and it was really well received, people really liked the combo. So, they said, "Yeah, let's do a tour sometime if you want to." So yeah, it worked out. I'm going to spend a week with them going up and down the West coast so I'm definitely preparing for that too, rehearsing, preparing merch. It's a giant scale up that I'm trying to figure out.

RH: That's awesome. I got your email with the track and everything. It's wonderful, exactly what I was hoping for. I could hear all of the manipulated samples. What did you think about the whole process?

RT: You sent over so many good samples. I tried to combine as many parts as I could, and tried to piece it together, kind of what we talked about before. I asked myself, "If I was to approach this, how would I do this?" One of the first things was that vibraphone sample, and just me thinking, "I want to record this to tape, and then half speed it. I want to get those rhythms in there, but just much slower, an octave down." I was feeling like that was the foundation. From there, I just looked at what else you recorded in B minor, and then just started stacking some of those things in. I think that I recorded a few pieces myself. I really wanted to not use as much of what I would put in, but rather glue the things that you already made and run it through the processes of what I would do. It felt more like, for me, that this was a collaborative composition. You played and recorded a lot of these samples. I just smashed them together in the way that I would compose a song.

RH: That's cool

RT: But yeah, that initial song, I was playing some other sounds that you had. And I was like, "Okay, don't put too much in this song..." because I really think that there is an opportunity here for you to move into your live performance of it and improvise with vibraphone, or guitar. Whatever you feel comfortable with, or what you hear. Just kind of leaving it open ended to talk about.

RH: Absolutely.

RT: When you were listening, did you have any thoughts about anything?

RH: I liked it. When I sent over those samples, it was the first time I had done anything like that. I went for the "kitchen sink" approach. I guess my initial fear was that we would be trying to stuff too much in the composition, but that didn't happen. It worked out perfectly. I think that the textures wove together, and the glue and parts you added to keep the phrasings together. I loved the loose sparse textures. And with the first movement being that sort of improvisation, that leaves it super open to expand melodic ideas. I think what might be neat—and this is up to you as well because I want you to think that this is as much your project as it is mine—if you felt that you heard melodies or had ideas for something that you would write on guitar, I could take that part and play it on a vibraphone, or play it on an instrument. That way it still feels like you're shaping melodies, the things that you would work with. I love the improvisation idea and I think that it would add a unique element. I just think that it would be neat to have a chunk of your guitar to work with.

RT: Yeah, I was thinking that normally I would add like one more melodic layer. But yeah, I can definitely do that with guitar. I'll just perform simple melodies and be able to be like, "However you would interpret this, play around it, add notes, or just general melody lines." That could be cool.

RH: I think that would bring it full circle.

RT: Okay, great.

RH: What else can I do for you to help the next process with the second and third movements. Actually, how comfortable were you with the first section, composing and arranging?

RT: Honestly, it was fun to just like have a bag of nice sounds, nicely recorded sounds that I normally wouldn't have. I don't have a vibraphone; it was great being able to drop it in and work with it. It was fun to be able to play with your sounds and be able to figure out what we can do with things. It was remixing in a way, taking those sounds and working with them. But way more open ended. It felt like more of a collage process, listening to what you made for me and putting it together in a way that I would make it, and then handing it back to you. We're making something different.

RH: Yeah, for sure.

RT: I was thinking for the second movement, you have a lot of interesting textured percussion sounds. I was thinking, with the four-track and the way I use the four-track, I love to record to the tape loop five second samples to each track. A lot of that for me is playing that track as a chord-based model—being able to play chord progressions. But I was thinking, it would be interesting if with some of your textured percussive sounds, if you were able to have the looping sound that you could fade in and out. That way you're building this textured collage within the tape loops. And then you can run it through effects and play it like another movement. Or maybe the tracks are all up and ran through effects, and you'll have the freedom to play something else. Or we can write something else like you were saying before, maybe a melody line on top of it?

RH: Yeah, that's pretty neat.

RT: Or maybe it's more droning? Maybe two of the tracks are more melody based, and two of the tracks are more percussive based. Then you are playing these intertwined, and you're playing something onto of that?

RH: I love that. And thinking about the entire composition, it adds a unique direction away from the first movement into something completely separate.

RT: Yeah, because the first one is a prerecorded backing track approach. This one is you just performing on the four-track. Something like that could be cool with guitar and the looper you said you got; being able to build those layers on top of the four-track.

RH: Yeah, and it adds a timbral difference too from the first movement.

RT: That's cool, so I'll take some of those sounds, and I'll take like a split percussive and melodic approach with the four-tracks. I'll also take a video to show you an idea of what it could be. Then I can send you a four-track cassette of that and you can put it in your machine. It's going to sound different in your machine, which will add another element to that. You said you had the TASCAM 414, right?

RH: Yeah, I think it's the Porta Two Ministudio?

RT: Cool, I was thinking too… I know we talked a little about graphic scores, but I don't even think it's like a graphic score. Its more or less playing these four-tracks and then also adding in the opportunity to use pitch bend to drift. Maybe having moments to go all the way down, or maybe all the way up.

RH: Yes

RT: So yeah, the second movement is a very performative, tactile, physical engagement.

RH: Yeah, I like that.

RT: Okay, cool. So that's what I was thinking for the second movement. I don't know how long that will last for. Maybe just kind of feeling that out? And that's the same for the first movement. Maybe that blends into the second movement? Maybe as the first ends, you can blend in the four-track for the second movement? Or like you said, maybe you're playing something as the backing track fades out of the first movement… Maybe you're playing the vibraphone and bringing up the next part on the four-track? I'm assuming that everything is going to be around you?

RH: Yeah, that's the plan. I really like that. I really enjoy the idea of blending the first movement with the second. There is an entirely different approach to performance that is going on.

RT: Right? You're like, pushing a fader up and sliding notes up. Yeah, it could be like a really interesting transition, both audibly and physically.

RH: Yeah

RT: And on top of that—I don't know exactly where this fits but somewhere in there with the MVS-1—we could have like a longer tape loop, of stuff that isn't necessarily

melodic but more textural? So, as you're changing pitch with that, it is adding a different layer? That could be brought into like one of the faders.

RH: The new unit (MVS-1) that you send me, right?

RT: Yeah. We could do it both in the traditional sense and with the extended loop where it is coming out of the machine. And with that you have the option to do gentle pitch bends by messing with the tape. And you can really manipulate the tape sound live. So maybe that can be cool to do; some sort of textural element in an extended tape loop, and then you're changing speed and physically touch it to give it different sounds.

RH: I'm down.

RT: Okay cool, so for the four-track tape loops… I'll do a melody track split with some percussion sounds. I might even do a couple of them. Then, maybe you can change in-between if you wanted to? Then I'll make an extended extra tape loop. Maybe with all of that, the third movement is combining all of them, or something?

RH: Interesting…

RT: It's either building all of them up, or it is reducing them to be like, solo on something. Maybe it's all faded into you doing something?

RH: I do like that. It would be neat to have it like that. I can see it going both ways. Getting super big or fading down to a melody line from the first movement, or something that returns. Like a large arch-form or something like that? I like both of those ideas. You mentioned that in the email, combining all of those materials. I was also thinking about adding a bass drum. If you put a microphone up to it and close mic it, you can get some pretty neat overtones and sound effects. Maybe adding drums to add resonance or something like that?

RT: Oh, I like that idea a lot. It would be cool to be able to see that performative aspect. Maybe putting a contact microphone on a drum or trying to stretch out those sounds. That would be really interesting. Yeah!

RH: Yeah, and in my head, I was thinking, "What are we going to go for?" When I recorded those samples, I kept it simple. I've got metal sounds and I've got some skin sounds.

RT: That sounds super interesting. Especially since you have access to those things. I think you should use something like that. Especially with everything else going on, I think it would be very awesome.

RH: Cool, I'll plan on that and start working on some preparations for that because we can add some interesting sounds to it. You can get a lot of different textures.

RT: That would be great, and a cool transition to the third movement. And then we can round it out with this (Inaudible)… I mean, what do you think you really want to do for the end? How do you imagine this piece ends?

RH: I was thinking about this a lot recently, and I was even thinking about the first performance of it. How do you even begin a composition like this? It doesn't feel like it needs to have the standard "walk out on stage.. bow... perform... bow." Especially given that we are using these different instruments for performance. I was really looking at it as almost more of an installation.

RT: Okay.

RH: I could almost see people walking in with a loop playing at the very beginning of the performance. Maybe a loop playing while people are getting settled, and it sort of just happens? When it comes to the ending, I'm torn. It would be neat to have that big climatic expansive ending, but you said it would be neat for it to tail out and get back to one person performing, which I love. Or maybe it's just me performing with one tape loop, and I fade the four-track out, it gives it a different character. We could even do it where it has two different endings?

RT: That's true as well! When you were saying that, I was just thinking, as the second movement is going and it has the four-track tape looping—and those are up—and they're playing their textures—I'm imagining you—and I don't know how this setup would be…but you might have the four-track in front of you and vibraphone to the side of you, drums to the other side of you, you start performing with the drum, and that's like on top of the four-track, and then maybe you're like…and I don't know how much of a stretch it is—but you're playing vibraphone and like building up a drum too… and then a crescendo like builds us up, and then you're ending that part. And it's just solely focused on the four-track. And it's just like the one loop at the end, or something like that, you know?

RH: I can do that.

RT: Yeah, so once you have this sound source, and you really make the intensity level crescendo, that would be neat.

RH: You could almost have like a (tapping sixteenth-notes on desk) build with the bass drum in this hand.

RT: Yeah!

RH: …And I could have maybe chords in the other hand or something? Maybe with a microphone on it for this washy delayed quality?

RT: I think that sounds really interesting. Especially with you performing the (tapping sixteenth-notes on desk) build going on, that sounds amazing.

RH: Then you get a release eventually, and it goes back to musical material from the beginning, and it can kind of fade out. Yeah, and again, it gives it some variation. It's funny because when I thought about this project I was like "it would be awesome to have that type of build" and how can you have a large ending, especially with music like this, only having one person and two hands to make it work. I think it's doable.

RT: When I think about my own approach, it's always about letting things—especially with the four-track—kind of build to a certain point and then work from autopilot. Then bringing up everything else between the guitars and guitar loops to meet the other parts and a level that makes it even bigger. And you're right, how do you create intensity and build without percussion. I ask myself that question a lot. How do I make something sound larger without cymbals, or drums? The traditional idea of, "Wow, this got heavy." And I think about that a lot, trying to build up parts to push dynamics and trying to build a moment that feels like it drops, or it gets bit.

RH: I like that.

RT: I was just thinking too, if there was a guitar part in the beginning that you're playing, say that's just being looped, or like it's a small phrase that's being looped, then you just turn it off for the second part. At the end you could bring that back easily, you can easily hit the loop pedal, bring that motif back in, and then everything's onto everything.

RH: Yeah, I like that. Everything is layered right on top of everything. If there's anything else that you are envisioning, go for it. Write it down. I'll build a setup to accommodate those ideas. Maybe it's a bass drum, or a kick drum that has a calfskin head on to get a deep resonant sound? I can use that to build up the pedals and the four-track.

RT: I never really thought about that, that would be really cool. You could have some real low end in everything, and some real deep thuds.

RH: It would be neat to see how it interacts with all of the layers, right?

RT: Because then you're just building. It's really that one-man band concept, but you're doing it in a different way. It is a cool idea to have everything going, and you're just like, the one-man band. That's pretty cool!

RH: We can try it out! And if it does not work or its tacky, then we can cut it.

RT: Let's give it a shot! I do think that like (Inaudible) is it like a timpani? Or is it like, smaller?

RH: Sorry, you broke up a little bit.

RT: No problem, so this drum. Are you able to tune this drum?

RH: Yeah, it looks kind of like a timpani, but the pitch is going to be indefinite. It's about 24 inches and you would put on a drumhead that you would use on like a floor tom, or concert bass drum.

RT: When you're doing your recorded prepared sounds on it, at the same time you could switch over to the vibraphone and hit it with like a cloth mallet or something like that. You could also have like, a tambourine on it, or something? Maybe cymbals on it?

RH: Absolutely.

RT: That's pretty interesting too.

RH: And if we want that punch, I can always use a kick drum. I could retune it, not like a punk-rock sounding drum, but something deep and resonant.

RT: Cool. I was also thinking—and these are just thoughts—if there's one tape for the middle parts, like movement two, what if there was another tape for the last part? I've been playing with the concept of a single bass drum part on a tape loop. So, you're creating a locked rhythm every time. Let's say its track four of the tape loop, it's going boom… boom… boom... then you are building around it. And this is just a concept I have because I haven't really been able to execute it. Maybe you can think of that as your metronome as you're playing other parts. Then you're playing to that kick. I guess then in more of a traditional sense it is metered? Less freeform? But I don't know if that's something you would want to play along to, or is it more organic to let it build as it is going to build?

RH: That would be neat to add. It's always something that we can fade out too at some point, if we wanted it to seem kind of aleatoric? Are you thinking about having me record it on the spot? Or something that's prerecorded?

RT: No, it would just be prerecorded on the tape loop. Then if you want the sound you just bring it up. Then you can weave in and out of that.

RH: Cool, I like that.

RT: Okay, let me try that concept too. And with a lot of these sounds, were looking for texture, right? We want different rhythms and textures to come out on the loops?

RH: I guess my question is, for composing those textures, what were you thinking of doing for the layering of those different rhythms? Is it going to be more open from the tapes and it is by chance?

RT: Yeah, absolutely. Things would be open and by chance—things would be slamming into each other. And depending on how chaotic the loops are, right? If all of the four-tracks are up you get a pretty chaotic noise, then you can build around that. And just because of the nature of the tape loop itself and recording on the four-track, it would be so hard to basically build a drumkit, right?

RH: Oh yeah, I've tried it.

RT: It is hard, you can get close. Any variation in tape speed is going to move it. If its isolated to one source, maybe it's just the bass drum that comes around once, then you can build around it physically with your instruments, but not necessarily with the tape loops. The loop would just have that bass drum, and maybe like a little piano sound or something else that weaves in and out.

RH: Yeah. If you do have that as the constant, then you can bring something else to play with the textures. The bass drum is there and I'm keeping time with it, but it comes in and has its own voice. Maybe its complementary, or interruptive?

RT: That would be really interesting. I'm going to make a tape loop with that too.

RH: Great.

RT: I think that these components—even just talking about them—is very exciting. Once we get those down and I'm able to give those to you, then we can see really how the performance can be. It could be really open ended. And it could be like what you said, "What works here?" Getting a bass drum and hitting it, does that work? Things like that. And I think that once we get to that point, do you have a space or a setup where you can leave things setup?

RH: I have a space. Everything is going to be setup. We can add instruments, take away things. Once this starts going, I'd love to send you recordings and ask, "Hey, does this work?" or "What do you think about this?" This way it's just continually growing.

RT: That sounds great. I was just thinking about the four-track, do you have a little mixer?

RH: I do.

RT: I was thinking that the four-track could go into the mixer, the MVS-1 could go into a mixer, and then you said that you had another tape player too, right?

RH: Yes, I just picked one up a few weeks ago from eBay. It's a GE American Printing House for the Blind Cassette Player.

RT: Oh yeah! Those are great, they're awesome. Those do reverse, and variable speed. I was going to say as well, for the first movement. I have that same machine and its really fun to do some weird tape loops in and adjust the speeds and adjust the sides too—you can flip which side it plays on. You can do some weird things with it. That could be a tool too. I was just thinking that the first movement could be recorded as a backing track. You could have your computer, but we could just record that first track on tape, and then you're basically computerless for the whole thing. And then it's just hardware, percussive things, pedals, and that's it. Then you wouldn't need a computer at all. Unless you wanted it, you could have it where these are the only tools.

RH: I think that's great. I'm going to try and get everything that I can from those sounds. My only thought was that if I did use the computer, I would use it for processing sounds.

RT: Yeah, and either way, whatever setup that really captures this is fine. That's probably going to involve some setup with what sonically you're trying to find.

RH: Right.

RT: But yeah, I already have an idea for some of these things, and I've been trying to document some of these little pieces of what I'm doing.

RH: Yes, please do.

RT: I can give you that. I have notes that I use to keep track of how that song was made, and exactly the steps. And this is actually good practice for me because I never do that. I'm always like, "How did I make that one thing?" But taking notes has been a really great tool.

RH: It will be great in my dissertation if you will allow that. I'm looking for a collection of those types of materials to fit into the document—the way in which this entire thing came together. You know…things that worked, things that didn't work, sketches, anything. The approach today is wildly collaborative. People asked me how this project even came to be, and they're stunned when I say, "I just asked him if he's interested." Which is only the first part, right? Then after that, how do you collaborate with someone on a new musical project with an artist. And so back to the artistic project, part of my aim is to show this process. This is what went into this process, and if it is something you would like to approach, this is the way in which we went through this.

RT: Right, right.

RH: So, I appreciate that you are going through the note taking process and onboard.

RT: Yeah, it's all very cool and it's an exciting project for me too. It's been a learning experience for me as well. I don't know if you have anything else for me, but I can get started with these things and send over some video demos.

RH: Yeah, that would be great.

Appendix B: Recorded Source Material for Randall Taylor

	Source Material	Performance Aim	Sample Length
Cymbals	20-inch China Soft Mallet	Sustain	2:10
	20-inch Ride Soft Mallet	Sustain	0:30
	Gong #1	Sustain	0:58
	Gong #2	Sustain	0:36
	Suspended 20 inch	Scraping	1:46
	Suspended 20 inch	Sustain	0:58
	Suspended 20 inch	Sustain	0:45
	Wuhan China	Sustain, Striking	3:00
Drums	Bass Drum #1	Striking	1:05
	Bass Drum #2	Sustain, Improvisation	1:56
	Cymbal and Timpani	C# Sustain, Improvisation	3:15
	Timpani	Improvisation	1:47
Melodic	Prepared Piano	Sustain	0:13
	Bell	B, Sustain	0:20
	Bell	D-D#, Sustain	0:18
	Bell	F#, Sustain	0:20
	Crotales #1	Bminor, Striking	0:19
	Crotales #2	Bminor, Striking	0:35
	Ebow on Prepared Piano #2	C#, Striking	0:07
	Ebow on Prepared Piano# 3	C#, Improvisation	2:48
	Marimba #1	Bminor, Improvisation	2:19
	Marimba #2	Bminor, Improvisation	1:33
	Marimba #3	Bminor, Improvisation	1:18
	Piano #1	D, Sustain	1:16
	Piano #2	D, Sustain	2:03
	Piano #3	C#, Plucking	0:30
	Piano #4	Bminor, Improvisation	0:32
	Piano #5	C#, Muted Plucking	0:33
	Piano #6	Bminor, Improvisation	0:34
	Piano #7	C# Minor, Sustain	1:57

	Pipes #1	Dmajor, Rhythmic	0:08
	Pipes #2	Dmajor, Rhythmic	0:08
	Pipes #3	Dmajor, Sustain	0:19
	Pipes #4	Dmajor, Sustain	0:34
	Pipes #5	Dmajor, Sustain	0:39
	Prepared Piano #4	Bminor, Sustain	0:26
	Prepared Piano #6 (Bminor, Improvisation)	Bminor, Improvisation	0:35
	Vibraphone Tin Foil #1	Bminor, Sustain	0:15
	Vibraphone Tin Foil #2	Bminor, Improvisation	1:00
	Vibraphone Tin Foil #3	Bminor, Sustain	2:00
	Vibraphone Tin Foil #4	Bminor, Improvisation	2:33
	Vibraphone #1	Bminor, Improvisation	2:34
	Vibraphone #2	Bminor, Improvisation	0:24
	Vibraphone #3	Bminor, Improvisation	0:15
	Vibraphone #4	Bminor, Improvisation	0:08
	Vibraphone #5	Bminor, Improvisation	0:38
	Vibraphone #6	Bminor, Improvisation	0:15
	Vibraphone #7	Bminor, Improvisation	0:18
	Vibraphone #8	Bminor, Improvisation	0:07
	Vibraphone #9	Bminor, Improvisation	0:51
Textural	Bamboo Chimes	Sustain	0:50
	Pod Rattle	Sustain	0:24
	Sleigh Bells	Sustain	1:23
	Steel Chimes	Sustain	0:55

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